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ACUTE SINUSITIS IN CHILDREN.*

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In the presentation of this paper we wish first to state that we have nothing new to add to the accepted methods of diagnosis and treatment of this condition, but were prompted by the apparent lack of significance attached to acute sinus infections, which are probably just as common in children as in adults. Included is a resumé of our methods of diagnosis and treatment.

Anatomy: A few words in regard to the anatomy of the nasal accessory sinuses are necessary. According to Schaeffer,[1] the maxillary sinus is present as a definite cavity at birth and hence thereafter is susceptible to disease. The sphenoid sinus by the third year may cause trouble. The ethmoid labyrinth is well developed at birth and progresses rapidly in development during the first year of life into the anterior and posterior divisions. The frontal sinus may not be determined as such until the end of the first year and, as an average, is not susceptible to disease until the seventh year. Embryologically, the frontal is an offshoot of the ethmoids, and where one is infected in the very young, the other will be also and will be treated as such. In the development of the sinuses, there is a great chance for the drainage passages of individuals or groups to be so arranged that they may be obstructed by pathological or other changes.

Separating the nasal cavity from the orbital cavity, there is a thin plate of bone subject to congenital dehiscences.

The cranial bone in the young is diploic in nature and is in intimate relationship with the diploic veins; hence, infection may spread rapidly through the skull.

Greenfield[2] brings out the fact that positive pressure outside the orbit, as in the nasal cavity, can with ease cause an increase in the tension within the orbital cavity because of the relationship of the soft tissues, muscles, vessels, and globe. The easy compressibility of the vein walls will result in early stasis and edema.

Pathology: Pathology is merely the question of bacterial invasion, infection, and stasis with pressure.

Etiology: Since we are dealing primarily with an acute condition, such factors so well brought out by Skillern,[3] Dean,[4] Nippe,[5] and others as the presence or absence of diseased tonsils and adenoids, vitamin deficiency, malnutrition, etc., need be given little space. We are impressed by the fact that in our group of cases only one followed a childhood infectious disease (measles). Crooks[6] emphasizes the fact that some degree of sinusitis occurs with every cold, the vast majority clearing up of their own accord. In nearly every acute case we have on record, a history of a preceding rhinitis was obtainable. Anatomical obstruction to the drainage of sinuses, such as a deformed septum or large adenoid, is obviously a factor in the development of the acute stage. An acute allergic rhinitis must not be overlooked. Forceful blowing of the nose, as urged by most parents, does much to drive infection into the sinus cavities.

Bacteriologically our cultures have yielded staphylococci, streptococci, micrococcus catarrhalis, and occasional pneumococci. The streptococci seem to be responsible for the more fulminating cases with the staphylococci as secondary invaders. Woodward[7] believes that when staphylococci are predominant osteomyelitis is a likely complication. Faulkner,[8] after Babcock, states that the pneumococci and staphylococci are the predominant organisms in the acute sinus infections in childhood. There is no specific organism as the causative agent in sinusitis.

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Diagnosis: In diagnosing acute sinusitis in children, there is the usual history of an upper respiratory infection and cough with the nasal discharge of a "bad cold" and associated general malaise. However, the child may have an acute sinusitis without a very evident discharge. Any child complaining of pain in the head should certainly receive careful examination, for headache is not a common complaint in children. In infants, restlessness and irritability may be the equivalent to pain in the older children. The temperature may be quite variable. In the cases we have seen, a most frequent presenting complaint is edema and reddening of the eyelids. While a rhinitis with nasal discharge is considered a normal episode by many parents, anything referable to the eye will bring them in for consultation sooner or later. There is usually swelling of the nasal half of the upper lid at the beginning, and at the other extreme chemosis, proptosis, and fixation of the globe, indicating orbital abscess. Tenderness may be present. Examination of the nose intranasally discloses edematous membranes with thick pus exuding from the upper nasal cavity. Transillumination is of some value, but X-ray examination is indispensable and should be obtained as soon as possible, both as an aid in diagnosis and also for comparison in case of complication. The importance of X-rays is emphasized in practically every writing on this subject. Usually there will be a cloudiness of the ethmoids and maxillaries, and the frontal if present.

We have been impressed with the lack of cervical adenitis and the apparent good appearance of a child in the face of a serious condition.

In the differential diagnosis such conditions as trauma, abscessed teeth, infections of the eyelids, face, and cavernous sinus thrombosis have to be considered. As pointed out by Babbit,[9] the last mentioned will cause considerable difficulty at times. Porter,[10] in his review of the cases from a Boston hospital, states that 75 per cent of the orbital abscesses were due to sinusitis and 82 per cent of these were in children.

Treatment: Treatment is both medical and surgical with conservatism as a keynote in the latter. The general practitioner, pediatrician, allergist, and otolaryngologist, depending upon the circumstances, must work in cooperation. The pediatrician takes care of the feeding problem and general condition of the patient; the allergist aids us in the cases secondary to this condition. Remembering that a moderate to severe rhinitis in a child means a sinusitis, usually ethmoid and maxillary, then the problem is to "keep the cold open", so to speak, while supporting the patient generally with proper environment, rest in bed, warmth, diet, elimination, fluids, and vitamin administration. To prevent stagnation in the sinuses, we use an ephedrin sulphate solution (1 to 3 per cent) in a bland oil. In the younger children this is used as nasal drops and in the older as a spray. When drops are administered, the turned back position of the head should be insisted upon, if their maximum effectiveness is to be obtained, using only a few drops at each application and repeating after several minutes if necessary. When a spray is used, the nose should be sprayed at intervals of a few minutes until proper aeration is obtained. There is no harm in an aqueous solution of ephedrin, but this does have irritative tendencies at times. Remember the secretion in a rhinitis is already acid in character and excoriations of the skin and mucous membranes are common. Following shrinkage of the membranes, a few drops of 5 per cent to 10 per cent argyrol solution may be instilled. Warning is given against the indiscriminate use of nasal medications. An allergic rhinitis should be watched for. Dean[11] states, "One must not forget that acute allergic rhinitis is a common cause of acute purulent sinusitis and its common sequelae, chronic purulent sinusitis."

If, from the symptoms and signs, we believe that the patient has more than "just a cold", then hospitalization is indicated, if possible. The same type of treatment as mentioned above is carried out and in addition more energetic methods are employed to keep the nose clean and the ostia of the sinuses open. The patient is put on ephedrin shrinkage; and at least once daily, more often if necessary, shrinkage and cleansing the nose is carried out under direct vision. Cleansing is effected by use of a cotton applicator and a blunt tipped suction apparatus. We have used dry suction (negative pressure) but are not generally in favor of it, believing as Kelly[12] does that often it does more harm than good, because of its difficulty in regulation of the pressure and the resulting damage to the intranasal membranes from too much negative pressure. We seldom use nasal irrigations and have had no experience with the Proetz displacement method of ther-

apy. In some cases the adenoid is removed in order to secure better drainage, as is done in ear infections.

Cold or hot compresses are used in case edema of the eyelids makes its appearance, and it is to be remembered, as Greenfield points out, that edema of the eyelids does not necessarily mean infection has actually spread to the orbit, but is based at first on stasis in the vascular system secondary to ethmoid stasis and is still amenable to conservative treatment.

Our choices in sedatives are aspirin and codein in appropriate dosage.

It may be mentioned here that, according to work by Lierle, Moore,[13] and others in regard to ciliary activity of the mucous membranes of animals, adrenalin 1:1000, thymol, and mercurochrome are contraindicated because of their depressant action. Other astringent medications commonly used such as ephedrin, menthol, and cocaine have no such harmful action.

Orbital Abscess.

If the case does not progress favorably, as reflected by the appearance of the nose, subsiding edema, drainage, temperature, and general appearance of the patient, then we believe surgical methods are indicated. Under surgical methods we include adenoidectomy, intranasal antrostomies, infraction of the middle turbinate, and external operation. The object, of course, is to obtain adequate drainage with the least possible trauma to the intranasal structures. All otolaryngologists will advise against surgery in the acute stages; however, at times, even in this stage, some surgery must be done, such as the performance of an intranasal antrostomy with infraction of the middle turbinate, if this is needed. Often it is not difficult to wash an antrum, using a blunt curved cannula inserted into an accessory normal ostium in the middle meatus. These are sometimes quite large in children. Little trauma is involved in this procedure. If an antrostomy is done, a rubber catheter is inserted into the antrum for subsequent irrigation and drainage. As an anaesthesia, we use local or ether, depending upon the age and conduct of the child. According to our records, a middle turbinectomy has seldom been done and is not advocated.

If the case has progressed to the point that we are rather positive an orbital abscess has developed, as indicated by proptosis and fixation of the globe or definite induration of the tissues, then external operation is performed without delay. We prefer an external route. Davis[14] and others, however, have drained their cases of orbital abscesses successfully by the intranasal approach. A curved incision is made, beginning below the eyebrow, curving downward and outward around the inner canthus of the eye. The periosteum is then elevated from the bone, exposing the lamina papyracea, and usually as you carry out this exposure an abscess cavity will be encountered with a gush of pus up into the wound. We do not stop here, as some surgeons advocate, but remove a part of the lamina, enough of the ethmoids, and if necesary a portion of the floor of the frontal sinus near its inner angle to enable us to place a rubber tube drain down into the nose leading from the infected area or site of the abscess. We do not usually find the point of leakage, but, when we have, it was commonly from the ethmoids. However, there has been one case when we demonstrated the perforation in the floor of the frontal, and another where we were reasonably sure the maxillary was responsible for the abscess. The original incision is closed with dermal sutures. The post-operative care is, as mentioned in medical treatment, special care in regard to the toilet of the nose and fluid intake. We

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find that we obtain good drainage from around and within the tube in the nose. Crusting and irritation from the tube is cared for by frequently cleansing the nose and the use of a bland ointment. Usually at the same time we perform the external operation, an intranasal antrostomy is done.

Orbital Abscess.

Blood transfusions are a valuable adjunct in treatment in the septic cases. Staphylococcus toxoid is given in these cases where this organism is predominant. We have used sulfanilamide during the past six months but are not ready to evaluate its efficiency at the present time. Hodges[15] recently reported good results in the treatment of certain well selected cases with X-ray therapy; we have not yet tried this method.

Complications: The complications are orbital abscess, septicemia, osteomyelitis, meningitis, brain abscess, and cavernous sinus thrombosis. The progress to chronic sinusitis may also be considered a complication. In checking the records of about 300 cases of acute sinusitis of all ages, the larger number of complications, excepting orbital abscess, seem to occur in the age group of from twelve to twenty years.

Case Records

We have for presentation thirty cases of acute sinusitis in children in the age group from birth through twelve years of age. This group includes only those cases admitted to the hospital because of the severity of their condition and does not take into consideration a large group of cases treated conservatively in the out-patient department of the hospital and in the private offices of the staff members. As expected, the ethmoid and maxillary sinuses were those always found to be diseased with an occasional frontal and rare sphenoid involvement. The majority of the patients were brought first for consultation because of edema of the eyelids (see Table I). There were two deaths in the group, each from brain asbcess and meningitis. Six cases responded to conservative treatment without any operative procedure whatsoever. In the table II, minor surgery indicates irrigation of the maxillary sinuses, infraction of middle turbinate, antrostomies, and simple incision of an abscess. Major surgery means a definite entrance into the ethmoid labyrinth, usually by the external route, in order to obtain adequate drainage. Five of the thirty cases had an associated acute purulent otitis media.

Cases—Table I.

No. Cases		*Age*	*Chief Complaint*	
30	Youngest	1 yr.	Edema Eyelids	20
	Oldest	12 yrs.	Headache	6
	Average	6.5 yrs.	Nasal Discharge	2
			Otitis Media	1
			Asthma	1

Prognosis: The immediate prognosis is good. Carmack[16] emphasizes care of these patients from several weeks to several years, stating, "The cure is often more apparent than real, especially in warm

Cases—Table II.

No. Cases	*Treatment*				*Complications**		*Deaths*
30	Medical	6	Surgical	24	Obital Abscess	9	2
			Minor	15	Brain Abscess } Meningitis }	2	
			Major	9:			
			Intransal	3			
			External	6			

*Complications present on admission to hospital.

seasons. Drainage and aeration of the sinuses must be maintained long after symptoms have subsided." Richards,[17] in a study of a large group of cases of acute and chronic sinusitis in children at the Children's Hospital in Boston, concluded that apparently in his group medical therapy was more successful in obtaining cures in the chronic cases and surgery in the acute cases. Generally it is our belief that the prognosis is better in regard to the development of chronic sinusitis after an acute attack the younger the child.

COMMENT

In conclusion, we urge that a rhinitis or coryza in children be considered as a potential acute sinusitis and that local treatment, discriminately used, be instituted toward relieving nasal congestion.

Surgery, otherwise than that of the minor type, should be delayed and then practiced as the last resort.

It is important that patients, after suffering an attack of acute sinusitis, receive proper observation and follow-up care.

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NOTE.—Discussion follows next paper by Dr. Edmunds.

ARE WE TOO SINUS CONSCIOUS?*

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For a number of years I have had the ever-increasing conviction that the public and, to a lesser extent, the medical profession are entirely too sinus conscious. Because of this feeling, I do not wish to convey the idea that sinus infection is rare or infrequent. On the contrary, it is probably the most frequent condition to which we are heir; it might properly be termed a universal infection because there are few, if any, of us who pass much beyond the stage of adolescence who have not had attacks of infection in one or more of the nasal accessory sinuses, which attacks leave certain structural changes in the mucous membranes that show on Roentgen ray plates years later, and it is often impossible to differentiate from plates alone whether such positive X-ray findings indicate an active con-

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dition or nothing more or less than changes due to previous infection which has long since been eliminated.

The idea, however, which I do wish to convey by the term "too sinus conscious" is that sinus infection or "sinus trouble," as spoken of by the laity, is being over-stressed and over-emphasized and that it does not deserve the importance which it receives as being the cause of the many vague and indefinite pains about the head and face of which so many patients complain; and neither do I believe that it acts nearly so frequently as a focus of infection, causing the manifold symptoms in remote parts of the body for which it is given credit. Now, many of you, I am sure, will disagree with this, but I would like for you to recall the fact that there are fashions in diseases as in clothes, and that you, as well as I, have seen a certain type of patient who would not think of having a headache from anything but "sinus trouble" and who gets a great kick out of back yard and over the bridge table talk about it, finally ending with a statement something like this, "I have a sinus," and oftentimes Mrs. So and So who listens to these symptoms of sinuses and operations get the idea that she must have a sinus too. Remember the "bridge club clinicians" are patient sufferers from and keen diagnosticians of sinus disease. Now, you must have seen also another type of patient who is sinus conscious, is usually of an unstable nervous make-up, is poorly adjusted to his or her problems, is full of unnecessary anxiety and phobias, and is being worried sick over the fact that in the morning when he awakens his nose is a little stuffy, that he has some post-nasal discharge of a mucoid character which has to be gotten out of the nose and throat and which discharge may recur at times during the day. This patient comes in and says, "I must be swallowing this discharge and I am afraid it is poisoning my system. I think I have sinus trouble." On the other hand, you surely must have seen, as I have occasionally, another type of patient who has a definite chronic purulent sinusitis with one or both sides of his nose reeking with pus and who does not give two hoots about it. There certainly must be something else besides sinus infection that is playing a part in the symptom-complex of these types of patients, and here, as well as elsewhere, it is just as important to know what type of patient has the disease as to know the type of disease the patient has.

That sinus trouble is quite prevalent and seems to be becoming more and more popular every day, I am sure you will agree; but since one of the aims of medicine is to reduce disease and promote the welfare and happiness of the people, the natural question arises, why is the public so sinus conscious, and if they are not made more unhappy because of it? By being so, they worry, they become unhappy, and they borrow trouble, and the patient with the mucoid post-nasal discharge, which may be entirely within normal bounds and means nothing, is certain that it is poisoning his system; it becomes a perfect bugaboo to him, and he develops a fear complex. No doubt high pressure advertising over radio, newspapers, and bill boards of the various patent medicines for colds, etc., have contributed to this state of affairs, but that is not the only factor. I believe that it is due in no small measure to the medical profession itself. Dr. Harold Hays, writing in the *New York State Journal of Medicine* on "The Conservative Treatment of the Nasal Sinuses," has this to say: "Perhaps more harm has been done by doctors and people knowing about sinuses than if they knew nothing about them at all. Patients have become so frightened by the word 'sinus' that they immediately diminish their own resistance by worrying until in some cases they actually develop a serious condition. I believe that the majority of suspected sinus conditions should not be operated upon and will recover if treated conservatively." We speak too loosely of sinus trouble to our patients and are inclined to be too pathological minded with them. Instead of telling them they have an acute nose cold or rhinitis, we diagnose their ailment as an acute rhino-sinusitis and tell them that they have sinus trouble which, technically speaking, is no doubt true, but when we place the term sinus uppermost in their minds, we put these patients in the same category as those with functional heart disorders by making them focus their attention on something which is very likely to be well in a short time. We are also too prone to blame the sinuses as being the seat of dangerous foci of infection that cause remote troubles in almost every part of the body, and it is probably this attitude which accounts for the marked rise in popularity of sinus troubles. The question now arises, is this attitude justified and do or do not infections in the sinuses cause systemic effects in remote parts of the body as frequently as they are given credit for?

In as much as sinus infection is not necessarily a nasal problem, but one in which every branch of

medicine has traced systemic disorders to and from, it is proper to consider the subject from this angle. How frequently a definitely infected sinus is a potential or an actual focus of systemic infection, I am not able to say, and regarding this point men of prominence and whose opinion we must respect are in marked disagreement, and it is puzzling and confusing to read of the marked differences of opinion that exist as to the status of the sinuses as foci of infection.

It will not be amiss to cite the opinions for and against. Dr. Willis Manges has recently said, "Nasal accessory sinus disease is one of the most important clinical subjects we have to consider today, and it is more frequently over-looked and more inadequately treated than almost any other disease of real consequence." Cullom also warns that the sinus is "the real factor in focal infection," while we have the report of Anderson who, from a study of four hundred consecutive cases of antral sinusitis, has found that it is not a significant factor in focal infection. Barnhill, in a recent consideration of focal infection, states that "a very great many operations have been performed with the view of eradicating foci in an effort to cure secondary disease, but the operative results have not been as worth while as had been hoped."

Clerf, in a study of two hundred cases of bronchiectasis, found concurrent infection of the sinuses in 82.4 per cent and believes that sinusitis is frequently responsible for bronchiectasis, particularly when it is bilateral, and thinks that the infection is carried by aspiration or by way of the lymphatics. On the other hand, Davis is of the opinion that the relationship between sinus disease and bronchiectasis is obscure and that the sinus condition is probably not primary.

The literature abounds with opposing views such as have been quoted, and to continue along this line further would be useless. It is pretty-well established that there are two groups with divergent opinions—one group who holds that the accessory sinuses are very rarely the source of focal infection and believes that no treatment or no surgical operation should be done unless the sinus itself is in need of attention. On the other hand, there are many who strongly recommend the sacrifice of any hypertrophed sinus mucosa when there is any reason to suspect that even this doubtful or silent sinus is responsible for symptoms elsewhere.

Is there any wonder, then, that the public is sinus minded and in a quandary as to what to do? No doubt there are extremists or left and right wingers in each of these groups, and it seems to me that there is a middle position which we may take. I believe that there are times when absorption does take place from infected sinuses and that systemic and remote consequences are the result thereof, but I do not believe that it occurs nearly so frequently as some would have us believe, and I am of the opinion that the remote effects of sinus infection are over-emphasizd and over-stressed; therefore, I would most emphatically cast my vote with the more conservative group, for I believe in the due course of time it will be conceded that they will have much the better of the argument.

My reasons for reaching this conclusion are not based upon research work in a laboratory or even an association with a large clinic, but sixteen years of observing and studying patients and using a certain amount of ordinary common horse sense have led me to this belief and there seems much to support it. For instance, take a patient with an acute fulminating suppuration of the maxillary antrum with marked obstruction to drainage, severe pain, and perhaps tenderness over the affected part. Here we have a large cavity filled with pus under pressure giving rise to all the local symptoms which such a condition would produce in other parts of the body. But the general reaction is quite different. Does this patient have any appreciable rise of temperature? He certainly does not; neither does he have the general prostration, the marked leukocytosis, nor the swollen lymphatic glands that so often accompany infections in the throat or elsewhere in the body. Why is this clinical picture so different? It is probably because the para-nasal sinuses are bony cavities supplied with natural avenues of drainage and facilities for evacuating secretions. The mucous membrane which lines them is thin and contains few blood vessels and glands and has poor powers of absorption. This has been shown by Childrey and Essex in experiments on the frontal sinuses of dogs. The natural openings of the sinuses were blocked so that they became closed cavities, and injections of such drugs as nicotine, rattle snake venom, and histamine were made through the wall and absorption was found to be poor in all cases. The primary object of this work was to estimate the danger of injecting highly toxic drugs in the treat-

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ment of sinus disease, but it was felt that the results indicated that toxins from contained purulent material are likewise absorbed in very minute quantities; therefore, if the absorption is so slow from cavities which have been mechanically closed, it should follow that absorption from draining cavities would be much less likely to occur, and this fact probably accounts for the lack of high temperature, general prostration, comparatively low white count and the other manifestations which usually accompany local infections outside of bony cavities.

This sinus complex is made more complex by the profession in the diagnosis of sinus infection, especially in the border-line or suspected cases in which the diagnosis is not made on clinical findings, but made chiefly on X-ray examination. Were we to take a series of two hundred persons, normal and abnormal, it is quite likely that there would be wide discrepancies among equally competent examiners as regards the presence of sinusitis unless the clinical findings were definite and clear-cut. A cloudy sinus on X-ray may mean under development, a thickened mucous membrane without clinical manifestations due to an old healed infection, to an allergic edema, to tumor or to pus. After all, the key to the situation here, as well as in the majority of diagnostic problems, is the clinical findings, a good history, and some common sense. Unless the relationship between cause and effect seems highly probable, we will make many wrong diagnoses by attributing the patient's symptoms to any and every abnormal finding that is discovered.

We may make a diagnosis of sinusitis on X-ray findings alone, and the patient may have sinus infection, I could not prove otherwise, but unless the clinical findings and history support this diagnosis, this cloudy sinus may be having no more to do with the patient's symptoms than his bow-legs or knock-knees, whichever he might happen to have. The important thing is to correctly evaluate all findings and place them in the proper category in relation to the symptoms. That is where I am afraid we, as rhinologists and physicians in general, often fail if we do not take into consideration the temperament, the make-up, the problems, and the adjustments which our patients are making. Many patients would not be coming to our offices today if they had made the proper adjustments to their problems and were happy and contented. You know that as well as I do.

I thoroughly agree with the late Dr. Dunbar Roy, of Atlanta, writing in the *Southern Medical Journal* on "The Rational Treatment of Nasal Disease," when he says, "It may seem odd for this statement to come from one who limits his practice to these diseases, but I honestly think that many a patient is today suffering from too much treatment. There is such a thing as over-doing matters, and the habit these days of persons having their noses and throats treated year in and year out is producing troubles which before did not exist." Continuing the quotation he says, "Not long ago a patient came to me from a distant city in Florida and, like all those who have the treatment habit, she was able to tell me exactly her nose and throat troubles before an examination was made. She had only a few days to stay in the city, but she wanted treatment. From her I ascertained that for the last three years she had been under constant treatment for her nose and throat, She was treated in New York City for three weeks by a certain well-known specialist. On her way home she had to stop in Baltimore because she felt the need of treatment. If she had not been on a through sleeper to her home, I imagine that she would have been treated at intervals on the way. She reached home, and the specialist there continued to treat her three times a week. When I examined carefully the nose and throat condition in this lady, there was found only the dry, irritative state of the mucous membrane incident to too much local treatment. 'Madam,' said I, 'do you wish me to tell you honestly the severity of your trouble? Then if you wish such a statement from me, I would say that you are suffering from too much local treatment.' "

This case may or may not be slightly exaggerated, but anyway it is more or less descriptive of types of patients who come into my office and recite the same kind of story. There is no doubt about it; they certainly have the treatment habit. In the words of a jecter writing on this subject, "One wonders where all this modern sinus trouble comes from and what it really may be. Some say its prevalence is an aftermath of the World War, some say it is the doctors new fad, and some satirically declare that with the high cost of living there are not enough appendix operations to keep all the doctors prosperous." So, in conclusion and in all seriousness, I could not better summarize the sinus problem and the ideas which I wish to convey in this discussion than to quote conclusions of Krimsky who says:

"1. Sinus trouble has become a very elastic term that is being loosely employed by both doctor and the layman to include not only sinusitis, but also all types and degrees of nasal infection; it has also served as a cloak to explain away obscure headaches, eye complaints, and all forms of general disorders.

"2. Sinus trouble should better be reserved for those cases presenting sufficient local pathology to require surgical attention; otherwise, it is bound to sooner or later fall into disrepute.

"3. The role of the sinus as a focus of infection has been much over-done, and the evidence in favor of the sinus as an active focus is insufficient to warrant such undue stress.

"4. Surgery as a rule is not a cure for sinus trouble and not infrequently is but a prelude to further surgery. Preliminary medical investigation is therefore wiser before than after."

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DISCUSSION OF PAPERS BY DRS. FITZ-HUGH AND EDMUNDS

DR. C. W. PURCELL, Danville: Acute sinusitis occurs in children far more frequently than is generally recognized. There is surely a degree of sinusitis with every attack of coryza. Haike opened the sinuses of sixty-two children at post-mortem and found fifty-two of them diseased. Others have routinely made X-ray studies of the sinuses of the children admitted to hospitals for tonsillectomy and adenoidectomy and found that approximately 80 per cent showed X-ray evidence of pathological sinuses. Sinusitis is rarely suspected in children, largely because there is a prevalent opinion that the sinuses in children are so under-developed.

Ashely believes that the predisposing causes of sinusitis are:

1. Physiological effects, such as unbalanced diet, poor ventilation and poor living conditions.
2. Mal-formations.
3. Allergy.
4. Infection.

Children who have sinusitis become anemic, irritable and undernourished. This leads to acute exacerbations with the dreaded complications mentioned by Dr. Fitz-Hugh. Very frequently tonsils and adenoids are removed when, really, the cause of the rhinitis is a sinusitis. Every child with the common complaint of frequent colds should have a careful history for any allergic state and a careful examination of the nose, throat and sinuses. In examining the sinuses, a search should be made around the middle turbinate for the presence of pus. Transillumination and X-rays should be done if indicated. If allergy is at all likely, nasal secretions and blood smears should be studied for the presence of eosinophils. Studies by an allergist should be made if necessary.

Conservative treatment of the acute cases should be emphasized. The majority of these cases will clear up when drainage is established. In using nose drops, it is best to avoid oily preparations in young infants, because of the dangers of lipoid pulmonary disease. Silver preparations should not be used over long periods of time, as cases of argyria are fairly frequently reported. Recently, Hetler has studied the nutrition in relation to infection of the sinuses. She stressed the importance of adequate diet, vitamins, especially vitamins B and C, minerals, and general hygienic measures. She found that improvement in the condition of the nose and sinuses follows the institution of these measures in practically every case.

I wish to thank Dr. Fitz-Hugh for bringing this subject to our attention.

DR. THOS. E. HUGHES, Richmond: Dr. Edmunds' paper has been read with much interest. He has made some observations on the subject of sinusitis that deserve our careful consideration.

Are we too sinus conscious? Undoubtedly, there is the unstable individual who has vague pains about his head and face, as well as in other parts of the body. Whether the pains are real or imaginary, granted that pains are possible without pathology, they are quite definite to the patient. I believe that the paranasal sinuses in such a patient should be carefully studied in a search to determine the cause of the pain. If the examination is thorough and no sinusitis is discovered, the physician's report should be sufficiently convincing to relieve the "sinus consciousness" of the average patient.

Occasionally, we meet a person who claims never to have colds; but it is usual for most persons to have one or two colds a year, and if the sinuses are not involved the cold subsides in a week or two. However, during each cold, the sinuses may be infected. In fact, I think it is remarkable that the sinuses so often escape contamination when we consider their proximity to the nares with which they directly communicate. Their anatomical relationship plus the forcible blowing of the nose filled with pus certainly makes the sinuses very liable to infection. Perhaps, if we properly consider our sinuses during and following each cold, we could be less "sinus conscious" the rest of the time.

Undoubtedly, there is at least one type of person who is too "sinus conscious." I alluding to one whose medicine

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cabinet is always loaded with nasal drops and sprays, and particularly with strong astringents. If such a person does not have sinusitis when he begins the use of these preparations, he will surely prepare a fertile field for it.

Some mucus in the nose, nasopharynx and pharynx, where mucous glands are present, is normal; however, I am always suspicious of sinus infection whenever there is sufficient post-nasal discharge of a mucoid character to annoy a person who is otherwise normal. Nevertheless, I agree with Dr. Edmunds that it is important to know the temperament of the patient whom one is treating, as some patients are greatly disturbed by comparatively minor ailments.

It is interesting to note the difference of opinion among members of the profession as to the effect of sinus infection on infections elsewhere in the body. As stated by Dr. Edmunds, an acute, purulent sinusitis seldom provokes a marked rise either in temperature or in the leucocyte count, and I believe that he has correctly explained the reason for the absence of the acute symptoms; nevertheless, many patients with acute sinus infection are definitely, acutely sick with headache, body aches, swollen cervical glands and toxemia. Furthermore, chronic sinus infection does, I believe, produce chronic bronchitis, neuritis and arthritis. The sufferer feels sluggish, mentally and physically, tires easily and lacks energy. These symptoms develop very gradually because the primary infection is in a bony cavity whose lining membrane contains few blood vessels and lymphatics. This anatomical condition makes the infection all the more insidious, and frequently some remote secondary infection gradually develops.

While it is unwise for the patient to be too introspective or conscious of any disease, it is important for the physician, when making a diagnosis, to bear in mind that sinusitis is a common disease. This may avoid exhaustive examinations or even a wrong diagnosis.

In his title Dr. Edmunds has asked a direct question, the answer to which is a matter of opinion. My opinion is that, although the lay public may be too sinus conscious, the average physician is not.

DR. W. AMBROSE MCGEE, Richmond: I enjoyed both the papers very much, but I shall limit my remarks to Dr. Edmunds' paper. I was glad to hear him say that the X-ray, which we formerly thought was definitely diagnostic of sinus infection, is not so. I am not speaking disparagingly of the X-ray. But the shadows which it shows are not necessarily infections. All of us have seen bilateral edema; all of us have seen angioneurotic edema. Normally, there may be a paper-thin sinus membrane. Later, during an acute attack, the membrane may thicken many times. At times we know it is difficult to say whether we have an infection or an allergic condition. A smear of mucus from the nose, made by blowing into cellophane and then smearing on the slide, is very helpful. If there are more than ten eosinophils to one neutrophil it is very suggestive of an allergic condition. Hansell has said that 80 per cent of all sinus is allergic. He is a noted nose-and-throat man.

There may be some other evidence of an allergic condition. There may be headache, fatigue, abdominal pain, nausea, repeated vomiting, croup, etc. Croup is not recognized as it should be, to be an allergic symptom. Or there may be asthma or hay-fever with seasonal distribution. I have a patient now who has been treated for eight years by a good nose-and-throat man for sinus infection. Yet his symptoms were seasonal—in the spring and fall every year. He developed an asthma, and the throat man recognized it then as an allergic condition.

An attempt to institute drainage by puncturing is similar to unstopping a dam by a small outlet.

Sinus infection is often due to the turbinate's swelling and blocking sinuses, and secondary infection develops later from stagnation of drainage.

As to X-ray treatment of the sinuses, the X-ray men may not agree with this, but in those not responding at all to other measures, X-ray treatment has been useful. I feel about X-ray for sinuses like X-ray for hives or eczema. It may give temporary relief, but those are local manifestations of some internal condition.

DR. WRIGHT CLARKSON, Petersburg: Dr. Edmunds is right in saying that the public is too sinus-conscious; particularly is this true now because of recent newspaper publicity. But the *medical profession* is not sufficiently sinus-conscious.

For many years I have routinely examined the sinuses of all patients referred to me for roentgen examinations of the chest and have found many lung conditions to be secondary to chronic sinusitis.

The roentgen method is the only accurate way to diagnose sinusitis. A thickened membrane in a sinus resulting from infection can easily be demonstrated roentgenographically and an acute suppurative sinus can usually be demonstrated by the accompanying periostitis. In fact, any foreign material or other abnormality in a nasal accessory sinus can usually be clearly demonstrated by a careful roentgen examination.

The first case of sinusitis that I treated by means of roentgen therapy was in the year 1924. At that time there was little in the literature about the use of X-rays for this purpose. I was rather surprised to find that the infection cleared up rapidly, and from that time up to the present I have continued to treat sinus infections, but always in close cooperation with a rhinologist, for roentgen therapy is not a specific for sinusitis.

I believe that pus under pressure in a sinus should be evacuated and that polyps and other obstructions that frequently accompany sinusitis should be removed before the treatment is begun.

I want to congratulate Dr. Edmunds on this paper, for it is timely and one of the best presentations that I have heard at this meeting.

DR. EDMUNDS, closing the discussion: I wish to thank the gentlemen for their discussion of my paper. I thought I should probably get more criticism of it than I have gotten. I think Dr. Hughes was particularly considerate in his remarks.

I hope you do not get the wrong impression of my idea of sinus infection. The preceding paper, of course, dealt

with definite sinus infections; nobody would doubt it; there is nothing questionable about it. But the cases to which I had particular reference were those cases who have vague pains here and there, and possibly someone has said they have sinus trouble. Well, it is a pretty good bet, anyway; probably nobody could disprove it. If the medical man could not find it, and the rhinologist could not find it, the X-ray might show a little thickening of the ethmoid capsule. There you have it. I think there are probably more of those than of patients who have definite sinus pathology. I think a real infection of the sinuses, that amounts to much, is not hard to diagnose. It is quite easy to diagnose.

I should like to cite one case I saw recently that bears out my impression that the public is too sinus-conscious. A man walked into my office and said he wanted to see me about his sinuses. I could see he had been through pain. He had his hand up over his face. He said for two weeks he had been having pain. I noticed his eye was very red and asked him what was the matter with it. He said the sinus trouble had gotten into his eye. I put my hand over the other eye and asked him what he could see. He could see nothing. This man had a case of acute glaucoma and had lost the sight of one eye, yet he said nothing about that and laid all his trouble to sinusitis. I asked him what made him think he had sinus infection, and he said: "A few years ago I had some pain in my head, and they told me it was sinus trouble, so I thought I had it again." That illustrates what I mean by the public's being too sinus-conscious. This patient had made his own diagnosis.

THE CARE OF THE AGED.*

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What is old age to which all wish to attain and at which all grumble when attained.—CICERO, DE SENECTUTE.

Since the days when the Roman civilization flourished much has been written about old age. Cicero's essay, "De Senectute," written in 44 B. C., has long been regarded as a classic. With the Revival of Learning during the Renaissance, man became more inquisitive concerning the structure of his body and the nature of his pilgrimage on earth. Soon after Vesalius completed his exhaustive treatise, "De Humani Corporis Fabrica," Luigi Cornaro wrote his book, "Trattato de la Vita Sobria,"[1] which still is one of the best treatise on life and hygiene. Other men, both physicians and laymen, later recorded their observations on the various aspects of the different periods of life. As the years passed, more and more attention was devoted to old age. Leonardus Lessius' "Hygiasticon: or the Right Course of Preserving Life and Health unto Extreme Old Age",[2] Francis Bacon's "Historia Naturalis et Experimentalis de Ventis",[3] and George Cheyne's "Essay on Health and Long Life",[4] though little known, must be given a high place in the literature on old age. Sir Hermann Weber,[5] the noted British physician, and Sir Henry Thompson,[6] the surgeon, both of whom lived more than four-score years, urged the necessity for moderation in all things in order to prolong life. Elié Metchnikoff, the eminent Russian biologist, was perhaps the first person to devote serious study to the effects of extrinsic factors, particularly the diet, on longevity. In his books, "The Nature of Man"[7] and "The Prolongation of Life",[8] he expounded upon broader lines than had hitherto been done, the philosophy of orthobiosis.

Geriatrics had its origin in 1724 with the publication of Sir John Floyer's treatise, "Medicina Gerocomica: or the Galenic Art of Preserving Old Men's Healths."[9] Since that time several note-worthy treatises have been published; as, for example, "Die Krankheiten des hoheren Alters und ihre Heilung"[10] by C. Canstatt, "A Practical Treatise on the Diseases and Infirmities of Advanced Life"[11] by D. Maclachlan, "Clinical Lectures on the Diseases of Old Age"[12] by J. M. Charcot, "The Diseases of Sedentary and Advanced Life"[13] by J. M. Fothergill, "Old Age; Its Care and Treatment"[14] by Robert Saundby, "Geriatrics: The Diseases of Old Age and Their Treatment"[15] by I. L. Nascher, "Geriatrics: Treatise on Senile Conditions, Diseases of Advanced Life and Care of the Aged"[16] by Malford W. Thewlis, and "Middle Age and Old Age"[17] by Leonard Williams.

A characteristic of nearly all of these treatises is the discussion of ways and means of attaining old age, and of some of its physical aspects. Lillian

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*Read by title before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

J. Martin and Clare de Gruchy wrote in 1930 a book, "Salvaging Old Age",[18] which differed from all preceding books in that the authors dealt almost entirely with the mental aspects of senescence. Raymond Pearl,[19] with a biologic viewpoint and with many statistics, has written on the expectancy of life after sixty-five years of age; Aldred Scott Warthin[20] on the physiology and pathology of old age or the major involution, and Sir Humphry Rolleston[21] has given a comprehensive review of the ancient and modern aspects of old age. A few years ago Alfred Worcester delivered an admirable lecture to a group of medical students on "The Care of the Aged",[22] in which he tried to interest them in the personal care of the senescent. Three years ago a series of short articles containing many valuable suggestions on the medical care of the aged was published in the *British Journal of Physical Medicine* and later in a small volume.[23]

While the literature on geriatrics is voluminous, the number of physicians who have devoted special attention to the care of the aged is small. Many possible reasons for this apparent lack of interest in senescence may be mentioned, among which is the fact that the discoveries and advances made in other fields of medicine attract more attention, and also the feeling that whatever is done for the senescent they will eventually succumb. We tend to shun the aged, to regard caring for them as a burden. We do not like to think that we too will grow old and perhaps helpless. We prefer clinging to the biologic conjectures and promises of science that the individual can be rejuvenated, the span of life greatly increased, and the unpleasant features of old age abrogated.

Although life expectancy at birth has increased since attention has been given to preventive medicine, the question may be raised whether a greater number of people are living to advanced ages. The great demands made upon us by present-day civilization, causing life to be more and more complicated and the environment often inharmonious, would seem to bear out the statement made in 1903 by Metchnikoff[7] that there is little if any chance of a really physiological old age and death for mankind. The same author seemed somewhat more optimistic four years later when he expressed the opinion that although man's "disharmonies" are many, there are, nevertheless, certain elements in human nature which give promise of a happier life, and that man can to some extent at least transform his "disharmonies" into "harmonies."[8] His ideal of orthobiosis was the development of human life so that it passes through a long period of old age in active and vigorous health rather than simply a prolongation of life. He thought that through the process of education in the structure, functions, and limitations of the human organism, future generations will be in a position to adopt the principles of orthiobosis, old age will be postponed, a greater number of people between sixty and seventy years of age will retain their vigor, and there will be fewer dependents in this age period than at present. It remains to be seen whether the prevention of diseases and the correction of environmental factors that cause degeneration of the vital organs and structures of the body will bring about this ideal in a civilization which is becoming more and more complex. At present, however, we are far from it; in fact, the recent investigations by Pearl[19] and by Warthin[20] show that life expectancy after the age of seventy has actually declined. This does not seem to indicate that modern science has extended the Psalmist's span of life of seventy years. Saundby's[14] prediction that only those persons who at the age of sixty possess bodies free from disease can expect to live to an advanced age, excepting, of course, injuries and acute infections, may be accepted as fairly accurate.

While aging is a natural and inevitable process, yet the very frequent occurrence of disease in elderly people causes one to wonder sometimes whether physiological old age is anything more than a relative term. Anatomical changes that are inevitable with age cannot be regarded as pathological, although it is difficult and often impossible to determine accurately where physiological involution ends and pathological changes begin. Physiological old age, according to Warthin,[20] is a process of involution and atrophy uncomplicated by superimposed pathological changes. Senile involution, according to Rolleston,[21] may be brought about by one or a combination of several factors—biologically to changes in the tissue cells, chemically to toxins of bacterial or metabolic origin, physically to colloidal changes, to endocrine disturbances, and psychologically to hetero- or auto-suggestion. The exceptional occurence of physiological involution without some evidence of superimposed pathological change is shown by the experience of Warthin,[20] who in thirty-eight

years did not see more than twenty-five necropsies of uncomplicated senile death. These deaths were due to myocardial atrophy and inadequacy—the natural termination.

True natural death must be very rare in the human race. In an interesting description of the course of natural death, Demange[24] stated: "Arrived at extreme old age, and still preserving the last flickers of an expiring intelligence, the old man feels weakness gaining on him from day to day. His limbs refuse to obey his will, the skin becomes more insensitive, dry, and cold; the extremities lose their warmth; the face is thin; the eyes hollow and the sight weak; speech dies out on his lips which remain open; life quits the old man from the circumference towards the centre; breathing grows laboured, and at last the heart stops beating. The old man passes away quietly, seeming to fall asleep for the last time."

The onset of senescence varies in individuals and in families depending upon various causal factors. We often see individuals with premature degenerative changes resembling those of senescence; whether they are due to abiotrophy by which Gowers[25] and Raymond[26] attempted to explain a number of diseases of the central nervous system, or to the lack of vital endurance, or to the effects of disease is an interesting question, although it is beyond the scope of this paper. The anatomical and physiological age is always more important than the chronological age. Some people obviously are old at sixty, while others are vigorous both mentally and physically at seventy-five. Since the nervous and cardio-vascular systems are largely the dominating factors within the body that determine longevity it is safe to say that senile changes in either one or both of these systems determine old age. The majority of elderly people die from some defect in the circulatory system; according to Pearl[19] this is true in men above fifty-five years of age, and in women above sixty. Thompson and Todd[27] found that among 169 deaths of pensioners with an average of 77.2 years, death came by way of the circulation in 36 per cent; through lesions of the respiratory system, pneumonia and broncho-pneumonia, in 24 per cent, and through malignant disease in 13 per cent. The nervous and circulatory systems are intimately correlated with each other, and disease in one, particularly in the cardio-vascular system, exerts a harmful influence over the other.

In healthy people the onset of senescence may be so gradual that it is seldom suspected until the individual notices the changed appearance of his contemporaries, or by a slow recovery from an illness, or by the advent of some disability as hypertrophy of the prostate, or dyspnea on exertion, or by catching a reflection of drooping shoulders in the mirror. Those who have looked philosophically upon old age are not perturbed by the earliest functional manifestations of its approach, as presbyopia, waning sexual activity, and fatigue. As the years advance there is a progressive dimunition in functional activity corresponding to the characteristic structural atrophy of organs and tissues. The response to stimuli of all kinds is diminished in contrast with the ready and often exaggerated response in early life. The popular opinion that old age is second childhood may be correct to the extent that frequently there is a superficial resemblance between the undeveloped mental powers of childhood and the failing mental powers in senescence. On the other hand, there is a great difference between the ever active child and the impassive grandparent.

There are no diseases peculiar to old age, and none from which it is exempt. From this standpoint, however, senescence has its compensations; for example, the metabolic disorders as diabetes mellitus, hyper- and hypo-thyroidism rarely appear for the first time in the aged, and when they do appear they are comparatively mild. Many of the acute infections rarely occur during this period of life, probably because immunity has been acquired in the course of the years. Erysipelas, influenza, and pneumonia are notable exceptions in that they are prone to occur during senescence. The clinical manifestations of diseases occurring in senescence often differ from those observed in the same diseases earlier in life. One factor accounting for this difference is diminished sensibility to pain. Thus coronary thrombosis, which occurs less frequently after seventy years of age, and the passage of either biliary or urinary calculi may not be accompanied by the agonizing pains associated with these episodes in younger people. It is not our purpose to attempt a discussion of the diseases that occur in the senescent; we wish merely to call attention to the fact that much can be done to make the evening of life more tolerable. Prostatectomy, the surgical removal of the sex organs which are prone to undergo malignant changes, and the improvement in methods

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of treating fractures of the hip may be cited as notable advances in relieving and preventing suffering in the aged. Obviously, however, surgical procedures cannot be employed for the relief of the majority of their complaints.

The care of the aged in one way or another devolves upon practitioners in nearly every department of medicine, and not infrequently upon physicians in more than one department simultaneously. In a great many instances their care depends more largely upon the art than the science of medicine, since methods of treatment suitable for younger people become progressively unsuitable for the senescent, and since also, they, as a rule, have more fixed ideas and habits. Their comfort and not their impossible rejuvenation should be the physician's aim. Sympathetic and symptomatic treatment with as few drugs as possible rather than much treatment and change of habits generally give much better results. Three centuries ago Sir William Temple wrote: "In all diseases of body or mind, it is happy to have an able physician for a friend, or a discreet friend for a physician; which is so great a blessing that the wise man will have it proceed only from God, where He says, 'A faithful friend is the medicine of life, and he that fears the Lord shall find him.' "[22]

The physician needs an inexhaustible stock of patience in caring for elderly people. Many of them are garrulous; their complaints seem grievous to themselves although they may in reality be trivial. Their confidence, however, is childlike and they are quick to recognize true friendship. Not infrequently their craving for friendship and sympathy causes them to magnify their complaints. One of the physician's greatest opportunities for helping them is in detracting their attention from their woes, in infusing a new zest for living, and in inducing composure of mind. The zest for living and composure of mind are essential for a happy old age. Many examples of the will to live may be cited. We have under care an attractive woman, eighty-two years of age, who has survived a severe illness one year ago. For several days during the worse stages we had little hope for her recovery. Although apparently a little more exhausted each day, she revived during the night, and on the following morning she would ask: "Doctor, don't you think I am better today?" Scarcely before her question could be answered, she invariably added this statement: "I must get well, I have much to live for." Her desire to live, engendered by a naturally optimistic attitude, and the pleasure she derives from associating with her friends, was a strong factor in her favor during this illness as it was in aiding her recovery three years previously from a fractured hip. While she still is unable to withstand much exertion, yet she goes riding, her mind is clear, and she enjoys the daily visits of friends. Their welfare as well as the welfare of the members of her family is her chief interest.

The lack of this *joie de vivre* in the aged engenders carelessness, neglect of personal appearance and a loss of power to react to environment. Becoming discouraged and despondent, they acquire the feeling that they are old and no longer useful. Thompson and Todd[27] were convinced, from their experience with 500 pensioners at the Royal Hospital in Chelsea, that the powerful factor of lowered mentality, due to loss of self-confidence, self-respect, and the instinct of self-preservation, was the chief factor in inducing premature senility. They succeeded in counteracting this lowered mentality by antidotal suggestion and by avoiding expressions of condolence. Any assistance which the physician may render in helping his patient to regain self-confidence may prevent a state of invalidism from developing. There is no better tonic for such patients than the encouragement of personal vanity. The physician who notices his aged patient paying more attention to her dress, if in no other respect than in wearing a pretty ribbon or a bit of lace, makes a large contribution to her happiness in helping her to banish discouragement and despondency. It seems scarcely necessary to say that success along this line requires unremitting personal care, and that it should not be relegated to the nurse.

A happy disposition enables one naturally to smile instead of frowning upon strangers, upon the succeeding generation, upon new ideas; it keeps the mind free from anger, hatred and jealousy which Francis Bacon[3] said "are the worst of all passions"; it tends to prolong life, and it is a healthy prelude to crossing the bar. Every one will readily agree with Sir James Crichton-Browne[28] that "the best antidote against senile decay is an active interest in human affairs, and those keep young who love most." The encouragement of such an attitude will prevent many elderly individuals from becoming introspective. The desire of many elderly people to

avoid as far as possible the society of the aged for the companionship of their juniors exerts, through suggestion, a wholesome influence, for, as Oliver Wendell Holmes said: "While we're youth in our hearts, we can never grow old."

The *joie de vivre* may be enhanced by the cultivation within reasonable bounds of some interests along with the main work of life. A hobby affords diversion, recreation and pleasure so necessary for the mental and physical welfare of every person. Those who have developed a hobby will find, upon reaching old age with its prospects of retirement, that they still have something interesting to occupy their minds. If more than one hobby has been cultivated so much the better, for diversity of interests keeps the mind young; the change from one interest to another rests, freshens and revivifies the mental processes. While creative mechanical work of some kind offers one of the best outlets for the old man's restlessness, yet, of all the interests he may have, that of gardening, planting and growing plants perhaps is the best form of exercise suitable to the needs of the individual. Since the mental powers usually are well retained in senescence, the person who approaches this period with the capacity for intellectual and cultural pleasures as music, art, science, reading, and writing fully developed will be happier. The individual who for any reason retires from his main work will be spared "a kind of mental imprisonment," so well described by Samuel Johnson, or a perpetual "holiday of horror" with its disastrous results both to mind and body. Elderly people, like the young, should heed the advice quaintly expressed by Sir Thomas Browne,[29] "dull not away thy Days in sloathful supinity and the tediousness of doing nothing."

A great deal of perseverance may be required in finding out what interests these people, especially those who have no hobbies. Martin and Gruchy[18] found, in their clinic for salvaging elderly people, 263 patients between sixty and eight-six years of age, subjects of complete boredom largely because they had no hobbies or interests after being retired from active work. With a modified form of psychoanalysis they ascertained the mental history of these patients, and what pursuits or vocations they were interested in at the time or had ever been from childhood. This often gave the clue to the remedy. After ascertaining the physical state of each individual, they made it possible for each one to begin doing the most suitable kind of work. As a result, the greater number of patients regained self-confidence and initiative, which enabled them to spend their last days in contentment. The point to be emphasized is that we must not let our elderly patients live in the past, but teach them to appreciate the present and the future, for therein lies their happiness.

Many instances can be cited from history of individuals who through their zest for living found happiness in the pursuit of their work, and at advanced ages enhanced their fame in art, science and literature. Michelangelo, the Florentine artist who excelled all other artists of the Renaissance in sculpture and in painting, became renowned in another art, architecture, during the last years of his long life. Ivan Petrovich Pavlov, the Russian physiologist who achieved fame through his researches on the digestive system, became still more famous through his investigations of the reflex action of the central nervous system. Goethe, the great man of letters, is said to have declared when an old man that life, like the Sibylline books, becomes more valuable as fewer years are left. Goethe lived eighty-three years. His activities during the last decade and a half of his life bear witness to the extraordinary width of his interests; art, science, literature; in fact, nothing seemed to escape his ken. In his latter years he wrote some of his finest lyrics, and completed Faust, the crowning achievement of his literary activities. All of us recall the notable achievements of Von Hindenburg, Marshall Foch, Clemenceau, Andrew Mellon, Oliver Wendell Holmes, and Thomas A. Edison in the last decade of their lives.

Instances may be mentioned also of men who for various reasons retired from their main work and found happiness in their latter years in the pursuit of a hobby by which their names are chiefly remembered. For example, Joseph Pellerin became one of the founders of the science of numismatics, especially of the department of medals;[30] Samuel Klingenstierna, the Swedish mathematician and natural philosopher, wrote a short time before his death in his ninety-seventh year, a paper embodying his observations in optical science, which won a prize offered by the Academy of Science of St. Petersburg;[31] John Latham practiced medicine thirty-three years, then devoted his time to the study of natural history, particularly ornithology, and when eighty-two years

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old he wrote a "Natural History of Birds" which was published in ten volumes.[32] Mme. du Deffand became famous for founding the first literary salon of the eighteenth century. In writing about her and her circle of friends Lytton Strachey[33] said: "They refused to grow old; they almost refused to die. Time himself seems to have joined their circle, to have been infected with their politeness, and to have absolved them, to the furthest possible point from the operation of his laws. Voltaire, d'Argental, Moncrif, Henault, Madame d'Egmont, Madame du Deffand herself all lived to be well over eighty, with the full zest of their activities unimpaired." In each of these instances the mind was kept in a state of healthy activity, and in some instances attention was diverted from bodily ailments, which, happily, left the mind in full vigor.

In many cases the question will arise whether the individual should retire following some acute illness from which he may have recovered, but which has permanently damaged an organ, as, for example, coronary thrombosis. That retirement will reduce mental and physical strain and often prolong life cannot be denied. In some instances it will become necessary. On the other hand, if the patient is one whose life and thought has been his work, who has never taken a real vacation nor cultivated a hobby, a complete change in the routine of his life by retirement may be more hazardous than working a few hours a day.

Although activity maintains the tissues in a state of health, it is not always a panacea for the prolongation of life. In supervising the activities of elderly people the effect of fatigue should be borne in mind. Especially should we bear in mind the effect of effort upon hypertrophied hearts due to hypertension, renal disease, lesions of the valves, and disease of the coronary arteries. The amount of activity which the tissue cells can withstand depends upon their structural integrity, and this in turn depends upon their inherent vitality and modification due to environment.

In caring for elderly people the physician often encounters difficulty in prescribing diets. Here again the personal equation is of great importance. The fact that their welfare depends largely upon a smaller quantity of food than was necessary during their more active years has been recognized since antiquity. All experience, both lay and medical, emphasizes the importance, for the prolongation of life, of strict moderation in indulging the appetites. Records show that only those people who eat sparingly live to advanced ages. Sir Henry Holland is said to have remarked that losing the teeth is a safeguard against over-eating. If so, this provision is largely offset by the dentist and the *chef de cuisine*, for he would have regarded artificial teeth and culinary triumphs as disguised enemies of a healthy old age. We would not advise against the use of dentures as they enable the individual to masticate his food, they aid in articulation, and they improve the appearance. Since one-half or more of the people past sixty years of age have either an absence of or a diminution in the secretion of hydrochloric acid,[34, 35] and probably also a diminution in the other digestive secretions, the diet should consist of food that is easily digested and absorbed. Milk is generally the best food for the senescent as it is for the young, although it is wise not to disregard the occasional dislike for it. As a rule it is better to allow the patient to continue with his accustomed diet rather to change to one that theoretically is more suitable. Sometimes we see patients who will not take a sufficient quantity of food to satisfy the needs of the body. By questioning them closely the physician will find some of them really hungry for old-fashioned food as a particular kind of bread or pie while seemingly unable to swallow malted milk or beef broth. Generally a simple diet and the warning to avoid the feeling of satiety may confidently be recommended. On the other hand, when a modification in the diet becomes necessary on account of the presence of disease, the patient's idiosyncrasies concerning food must be borne in mind. Gastro-intestinal disturbances of a functional nature occur less frequently in the senescent than in younger people.

Since the physical well-being of the aged depends largely upon the state of the circulatory system, much attention must be given to the condition of the heart and arteries. With the passing of the years the cardiac reserve strength diminishes, causing dyspnea on exertion. The heart rate may remain normal when the patient is resting and the heart is compensating, or it may be a little faster or a little slower than normal. Extra-systoles occur so frequently they could hardly be regarded as having any significance provided the response of the heart to effort is normal in other respects at this time of life. When the extra-systoles are due to extrinsic cardiac

causes they may be relieved by correcting gastro-intestinal disturbances, by giving attention to the possibility of indulgence in coffee or alcohol, or by treating the anemia which is commonly found in the senescent. The improvement observed in elderly people who complain of dyspnea, pain and tightness in the chest on exertion, sometimes is surprising. While the prognosis must always be deferred in order to observe the response to treatment, yet when the history points to over-exertion or insomnia, and the symptoms readily subside, the prognosis is favorable.

As the years advance, the elasticity of the arteries diminishes. To some extent arteriosclerosis without hypertension may be said to be a normal accompaniment of old age. On the other hand, hypertension with much arteriosclerosis must be considered a pathological change. In a group of 700 patients seventy-five years of age and older, Willius[36] found 70.3 per cent had a systolic pressure of 140 mm. of mercury or higher, and 20 per cent had a diastolic pressure of 90 mm. or higher. Our observations in a group of seventy-five patients correspond fairly closely to those of Willius. As the blood pressure varies so much, it is difficult if not impossible to say what is the normal pressure in the senescent. An elevation of the systolic pressure up to 200 mm. of mercury probably is of no grave significance provided the arteries as far as can be ascertained are fairly healthy.[37] Finding a blood pressure that is low for the age, in the absence of any pathological condition, suggests a long life for the individual. The boundary line between physiologic involution and a pathologic process in the circulatory system is poorly defined, and the variations are very great.

Although the kidneys probably do not play as important a part in the physical age as the cardio-vascular system, still in some individuals they are the first organs to undergo serious degeneration. The changes in the kidneys due to senescence are accompanied by urinary disturbances and alterations in the constituents of the urine, particularly the urea. As a result of a decreased amount of urea in the urine there is an increase in the amount in the blood. In apparently healthy old people an urea estimation of 40 to 50 mgs. per 100 cc. of blood in the fasting state would hardly be considered abnormal. Rappleye[38] found increased blood urea in 50 per cent of forty-one patients between seventy and eighty-eight years of age. In many instances it is difficult if not impossible to determine whether the increased blood urea and the urinary disturbances are the result of lowered metabolism and general atrophy, or to hyperplasia of the prostate gland, or to renal disease. As in the case of the circulatory system we are handicapped in differentiating normal involution and a pathologic process.

Varying degrees of chronic bronchitis with emphysema is a common finding not only among the aged but also in many people, especially men, before they reach the age of sixty years. These conditions seem to be associated with a degenerative process in the bronchi and alveoli in many people who do not give a history of frequent attacks of colds, or of chronic infection in the upper respiratory tract with drainage downward, or of pulmonary infections, or of disease in the circulatory system. Chronic bronchitis and emphysema lower resistance, predispose to infection, and not infrequently they cause more or less disability. In caring for these patients it is necessary to warn them frequently against rendering themselves vulnerable to exacerbations that follow upon acute attacks and also fatigue. The liability of pulmonary complications when senescents are confined to bed is well-known, and requires constant vigilance by the physician. Even then pneumonia develops in many cases. Although this disease has always been considered the great enemy of the aged, Osler referred to it as the old man's friend since it leads to an easy and painless death.

Healthy old people withstand surgical operations better than the mere number of their years is commonly supposed to determine. Before an operation is attempted, however, a thorough preliminary medical examination should be made, including a careful study of the cardio-vascular-renal system. When time permits fluids and glucose should be given in reasonable quantities in order to prevent as much as possible hypohydration and depletion of the glycogen reserve.

In caring for the aged we must bear in mind the fact that their reaction to drugs frequently is different from the reaction earlier in life. The physiological response often is slower, due in part at least to slower absorption from the intestine. Often also the response is more prolonged. For this reason an accumulated action is more likely to occur than in younger people. While elderly people as a rule can take drugs in the doses ordinarily prescribed for

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adults, they often cannot take the same total amount before showing toxic symptoms. Some drugs are not tolerated as well by the senescent body. For example, many elderly people are sensitive to digitalis; a smaller amount of this drug is required to digitalize the heart and to maintain digitalization than is ordinarily required. Of other drugs frequently indicated, it has been said that belladonna may excite the cerebral centers and interfere with sleep. We have found it to be well tolerated by the aged. Sedatives and hypnotics should be given when necessary to prevent restlessness which might otherwise increase weakness. They should be prescribed in moderate doses since they often seem to cause mental confusion instead of producing sedation. The narcotics, especially morphine, may cause too much depression, still when they are needed they can be given in moderate doses. According to Nascher,[15] morphine may be given in the same doses as in earlier years if, in order to obviate its paralyzing effect on a weakened respiratory center, atropine is given before the morphine so that their actions are timed to coincide, instead of giving them at the same time when the effect of the atropine comes later. For the excessive cough of bronchitis which is out of proportion to the expectoration, small doses of codein and of sodium bromide may be frequently given. Sometimes these drugs may be given to better advantage in an aqueous solution than in a syrup. Hydrochloric acid, iron, and liver extract are frequently indicated, and they are well borne. The time honored iodides also are well tolerated, and they still are the best drugs for stimulating bronchial secretion in patients with chronic bronchitis, emphysema and bronchiectasis. Syrup of hydriodic acid is one of the best preparations of iodine for the elderly. Unlike all of these drugs, laxatives seem to be well tolerated, even in larger than the ordinary doses, although purgation should be avoided.

In addition to prescribing drugs, optimism is essential in caring for elderly people. They easily become discouraged, knowing as they do that they do not recover from the ordinary ailments as readily as younger people, and also that they cannot have many more years in which to live. We must not forget that the aged feel a sense of loneliness as they have out-lived many of their own generation. Even if members of their own generation survive, it is probable that only by good fortune can there be any more meetings. The separation of members of the family has often caused the loss of their old homes. Bacon[3] quoted Ficinus as saying: "Wise it was of the Emperor Vespasian in his old age not to alter his father's house, being but a mean building, because the old house did put him in remembrance of his childhood: and besides on festival days he would drink in a silver-tipped wooden cup which was his grandmother's." Then, too, they cannot readily adopt the customs of the new generation; they belong to the unforgiving past. They long for kindness, but without the appealing attractiveness of youth, they seldom win new friends. Words of encouragement often give them new hope; in fact, many times an optimistic word will do far more good than drugs. Whether our aged patients are active mentally and physically or in a state of decrepitude so well described in the twelfth chapter of Ecclesiastes, they cling tenaciously to life. It is unwise to accept at face value the old woman's statement that she longs for release from this world. The aged sometime seem to have the hallucination that the dreaded end is near, and by taking to bed they shorten their lives. No good can be accomplished by arguing with them; champagne and strychnine may fail, though they may be encouraged by indirection, as, for example, by bringing their clothes to them.

In conclusion, we may say that old age is as natural as growth and development, and that the crowning glory of life is to grow old gracefully. Old age need not be regarded as a disagreeable period of life. We need the sane thinking of the mature mind, and the wisdom that comes with ripening age and the later years of a well-ordered life and mind. The elderly should be encouraged to avoid melancholy, loneliness, and self-pity, by maintaining self-respect and initiative. The care of the aged more often depends upon the art than the science of medicine; making them comfortable and happy should be the physician's aim.

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DISCUSSION

DR. J. W. PRESTON, Roanoke: Dr. Seward's paper is unique in that he discusses in a most pleasing way the subject of oncoming age both from a broad historical standpoint and from that of physiology to the border-line of pathology. His bibliography is unusually complete, his quotations apt, and his observations accurate.

A paper of this character at the present time is most appropriate in that attention is now focused most sharply upon old age pensions, upon the consideration of the many factors which have to do with longevity, and upon their relation to the future balance between youth and age. Upon every hand discussions are heard relative to the difficulties of those after middle life obtaining employment, of the increased stress and strain incident to the faster moving and quicker thinking of the present. Even our most august tribunal, the Supreme Court, has not found itself immune from a free-for-all discussion and criticism as to the senescence of its members.

The reminder is timely that it is well worthwhile that we observe certain important differences in symptoms touching diagnosis in the aged, notably the fact that in many the sensations grow less acute and that organic troubles of the heart, kidneys, lungs, and ailmentary tract may become rather far advanced without particular attention having been directed to them through complaints upon the part of patients.

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Dr. Seward's statistics as to the relatively few individuals who grow old with bodies and minds free from pathology are rather discouraging, but lead to speculation as to whether or not, with better organized social service facilities, the possibility of some form of old age relief and a general awakening of the public to the need may bear fruit. More hopeful perhaps as a speculation looking to more physiological advancing years and greater longevity is the present-day intensive drive of the forces of civilization toward improved dental hygiene, the elimination of focal infection elsewhere with their train of dependent diseases, the fighting of venereal diseases in the open, and particularly a better understanding by the public of the importance of cultivating hobbies and pastimes as one goes along in earlier life, so that these may be carried on into advancing years.

Oliver Wendell Holmes' observation to the effect that the reason why women live to a more advanced and happier old age than men is that they have learned to work with their hands and thereby to keep occupied is not the least contribution of this eminent author to medicine.

Touching further the matter of health and longevity of the aging, it is, I believe, agreed by all that the most dangerous season of the year for the aged is that of winter time, when the inclement weather confines indoors, preventing normal exercise and fresh air, bringing with it infections of the joints, of the respiratory passages, and impaired circulation, and withal drooping spirits and gloomy forebodings. Heretofore it has been only the wealthy who could afford transportation and a change to warmer climate during the winter months. More rapid and cheaper transportation, notably of the railroads, automobile, and, last, but not least, the automobile trailer and aeroplane, are rapidly changing all this. Is it too much to surmise that by degrees a tropical playground may develop for the old as well as the young not only in Florida, but also in the islands of the Carribean and perhaps even in Mexico and Central America? Another dream, perhaps, but a semblance of reality and a possibility!

Dr. Seward's closing statement, that the care of the aged depends more often upon the art rather than the science of medicine, is in accord with the best thought of our times. It cannot be otherwise than that, like barnacles accumulated through the calms and storms of the voyage, the aged must bear cicatrices of focal infection, of the strain and stress upon heart and vessels, of the psyche and central nervous system. The physician who appraises these at their true value, who gives a sympathetic hearing to what at times are tedious details of the past, who in his demeanor radiates a spirit of hope and optimism, both wins exceedingly grateful patients, and succeeds best in the care and treatment of the aged.

THE VALUE OF POSTURE IN THE EVACUATION OF SECRETION FROM THE TRACHEOBRONCHIAL TREE.

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The promotion of drainage from the trachea and bronchi is essential in the treatment of patients with suppurative diseases of the lungs, and many methods have been employed to produce this result. One method is drainage by posture which has been attempted in a variety of ways.

Frequently the patient is told to lie prone on bed or table and to hang his head over the edge of the supporting structure. Of course, this is useless if one wishes to have the patient in such position that the flow of secretion will be aided by gravity. Elevation of the foot of the bed rarely promotes drainage to an appreciable extent and if the elevation is pronounced the patient constantly slips toward the head of the bed, thus increasing his discomfort. Specially constructed tables provide more comfort but are expensive and difficult to obtain for the average patient.

The most satisfactory method of drainage by posture is to have the patient kneel on the edge of a chair or low table and place his hands on the floor. In this way the trachea is so inverted that secretion in the lungs descends by gravity. In many instances large quantities of sputum will be expelled by such change in position.

Having reviewed the usual methods of promoting postural drainage, it is well to consider the types of pulmonary lesions which may be benefited by such treatment. Effectual drainage by posture is associated with a moderate or marked degree of physical effort, depending upon the method which is employed. The benefit following drainage by gravity is sufficiently uncertain to make it inadvisable for patients who have tuberculous lesions or who are markedly debilitated.

Pulmonary abscess usually is associated with a stricture in the bronchus communicating with the area of infection in the lung and, until this stricture is dilated to permit the flow of pus, change in posture will not be beneficial. After the stricture

has been dilated, change in posture to promote drainage is seldom required. A patient with an abscess in the upper lobe of a lung is sometimes subjected to a great deal of useless discomfort in an effort to increase drainage by inversion when a sitting position in bed would be the most effective method in promoting the flow of pus from the bronchial opening.

In chronic bronchiectasis drainage of the lungs by posture may be helpful in reducing the amount of fetor of the secretion and in limiting expectoration to convenient periods of the day. Increased physical effort has a tendency to produce pulmonary hemorrhage in patients with bronchiectasis and, when bleeding is occasioned by postural drainage, it should not be employed.

In the utilization of drainage of the lung by posture the patient should be given definite instructions. The time of drainage is important and it should always be done before meals and before retiring at night. If postural drainage is attempted after meals vomiting may occur.

A few patients with bronchiectasis may find that the flow of secretion from the lung does not begin until after breakfast, in which cases inhalation of steam for ten or fifteen minutes will promote drainage. Cough should be forced and continued as long as secretion can be ejected. At first the patient may not be able to remain in an inverted position for more than one or two minutes at a time, but this period can be lengthened gradually to five or ten minutes. It is extremely important that the bronchiectatic cavities be emptied at night before retiring, as this reduces the stagnation of secretion and makes the odor of the sputum less offensive.

Regular postural evacuation of the tracheobronchial tree carried out over a long period of time will lessen absorption of secretion, reduce the odor of the sputum, and limit the cough and expectoration to convenient periods of the day. This treatment will not cure bronchiectasis, but when it enables a patient to work in association with others without odor to his breath and without constant cough which arouses the suspicion of tuberculous disease, it becomes a valuable form of therapy.

Medical Arts Building.

FEVER, MALARIA, AND SHORT WAVE IN THE TREATMENT OF NEUROSYPHILIS.*

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J. Wagner von Jauregg's introduction of fever therapy within the last two decades has been followed by an accumulation of reports from all over the world, the majority of which corroborate the favorable results obtained when neurosyphilis is treated with a combination of fever and spirochetal drugs.[1] There is some variation of opinion in regard to the comparative effectiveness of the natural fever that follows the inoculation of malaria,[2] intravenous antityphoid vaccine, and intramuscular milk or sulphur; and the mechanical fever that results from hot tubs, hot packs, electric pads, carbon or tunstil light, hot air cabinets (Kettering's method), diathermy, and inductotherm.[3] There is still a third group who feel that the pentavalent arsenobenzols (tryparsamide, salvarsan, stovarsol sodium), because of their special efficacy against neurosyphilis, are quite effective without fever.[4]

My own experience has been that malaria is the most satisfactory of the natural fevers and the inductotherm of the artificial fevers, though some clinics still effectively use other fever producing methods. I use drugs alone in the early cases of neurosyphilis, and, unless there are contraindications, they are used before or after malaria and dur-

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ing the inductotherm treatments. Fever therapy is selected for the acute, progressive, malignant syphilis as the first procedure. The decision of using malaria or the inductotherm is often based on the patient's ability to cooperate. It is necessary to have a certain amount of cooperation on the part of the patient to give fever by mechanical means, but this is not true of malaria. It would, therefore, follow that the earlier cases may receive drugs alone, the advanced cases fever and drugs, and the disturbed cases malaria and the arsenicals. Thus, it appears to me that it is difficult to statistically assay arsenicals, mechanically produced fever, and malaria.

There are differences in opinion not only in regard to the relative value of malarial and artificial fever, but also in the optional amount, the desired height of the fever, and the number of hours above certain temperature levels.[3-4-5-6-7]

The appreciation of my own evolution in the selection of cases and in their treatment has led to an analysis of my cases of neurosyphilis treated with fever. In this paper I shall limit my discussion essentially to the practical problems that present themselves to us as practitioners. The first question is whether or not the patient with neurosyphilis should be treated. Cases that have marked deterioration of function, as manifested by paralysis of the sphincters, very severe ataxia, and advanced sensory disturbances, should be spared the discomfort of any treatment regimen.[8] Aged patients should be treated with caution. The oldest person to whom I have given malaria was fifty years of age, and the oldest to whom I have given inductotherm was fifty-seven years of age. In congenital neurosyphilis the pathological processes can be shown in the brain, particularly the cerebellum, of the syphilitic, premature stillborn.[9] Juvenile tabes or general paresis usually runs a progressive course to a fatal issue;[10] thus, one should attempt to treat these cases early. In this series my only case is a child nine years old. I have since given malaria to a baby two years old.

At the Wagner von Jauregg Clinic in Vienna in 1928, I was taught that the contraindications for malaria were obesity, advanced age (50 years), diseased heart, liver, or kidneys, and pulmonary tuberculosis.[11] I have tried to adhere to these general contraindications, but in most cases the treatment has to be individualized. Case R.C. was advised to have fever therapy, but he chose to return home on drugs. He was re-admitted to the hospital some months later psychotic and jaundiced. After a conference with his physician and his family, everyone fully appreciating the dangers in malarial therapy, he was given malaria and later returned home mentally clear.

Selecting cases for fever therapy is not so much a question as to whether the patient should have fever, but whether we can afford not to give him fever when we weigh the hazards of treatment and the malignancy of this progressive disease. The tabetic with a morphine habit, the paralyzed, and the insane are such unfortunate states that a treatment which offers a possible way out is certainly recommendable. I always feel that the reward is worth the gamble in the face of moderate hazards provided the disease is not hopelessly advanced.

I now come to the choice of malaria or the inductotherm. The giving of one disease to cure another was recorded in European medicine in the latter part of the nineteenth century.[12] However, it was the work of Wagner von Jauregg that gave to the medical profession fever therapy.[13] The explanation of why improvement occurs following fever is still an open question. Wagner von Jauregg has repeatedly expressed the opinion that fever is not all in malarial treatment. Dr. Robert C. Cunningham, in the Rachford Lecture given at the University of Cincinnati in 1935, said, "The use of malaria in tertiary syphilis has been rationally explained in terms of increased production and stimulation of tissue macrophages. In this conclusion we entirely concur." A fever of malaria over 102°

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by mouth seems to be very effective, and frequently these patients do not run a fever of over 104° to 105° and good results are obtained. The fever advised by the electropyrexia is higher. Neymann[14] states, "Temperatures at 41°C. (105.8°F.) and above, maintained for at least two hours, kill most of the treponemata pallida in the human body." This, however, is questioned. A single inductotherm treatment is one in which the temperature is raised to around 106° for two hours at least and five hours above 103.6°. For the first treatment, however, the patient is taken slowly and his temperature often not allowed to go over 104° or 105°. The number of treatments advised is from ten to twenty and some of the enthusiastic therapists have reported giving more. Dr. Emmett F. Hoctor, of Farmington, Missouri, reported giving sixty-six treatments at three or four-day intervals with definite improvement being shown first at the fortieth treatment and the patient being discharged after the sixty-sixth treatment (*American Journal of Psychiatry,* Vol. 93, No. 3, Page 258, November, 1936). It is stated by Neymann[14] "All these therapies have one common factor—fever," and it is said in the same paper that electropyrexia has no toxemia, and therefore, the patients stand high temperatures that are required to be effective against the spirochete. Neymann is of the opinion that those who report electropyexia as being less effective than malaria have not carried out the treatment properly. He has not had bad effects from these very high temperature ranges and generally gives a series of twenty treatments. It is my observation that the patient stands the treatment itself fairly well, but the aftermath of vomiting, kidney damage and tremors are not to be dismissed too lightly.

The inductotherm necessitates a rather large initial expense if only a few cases are to be treated. A physician must give the treatment or constantly supervise an especially trained technician. In addition there must be a nurse or a trained attendant. It has the definite advantage of always being available; the treatments can be planned for certain days that are most convenient for the ambulatory patient. In the case of W.C. it was necessary for him to work five days a week in order to keep his position. Antiluetic drugs can be given along with the treatment. One avoids the difficulty of obtaining a known strain of malaria and the uncertainty of the patient becoming affected. The inductotherm allows one to regulate the fever according to what is best for the patient. The patient whose physical status is poor may be given a rapid rise of temperature which is allowed to drop immediately. This spike of fever is both well tolerated and seems to be effective.[15]

Malaria is more practical for a doctor who is familiar with fever therapy but who treats only a few patients. The necessary equipment is the physician's understanding of the procedure, the malarial plasmodium, a capable nursing staff, and laboratory facilities. One advantage of malaria is that it can be given uncooperative patients. There are certain difficulties. One may get a malignant strain. This happened in the case of W.C. when the laboratory recorded a tertian malaria. This so-called tertian was given and he developed estivo-autumnal malaria. However, the patient is now well and playing in a local orchestra. The uncertainty of the inoculation and the variable incubation period may make this treatment expensive to hospitalized patients. The patient who has begun to have his fever attacks must discontinue his work. Jaundice is a contraindication and its development caused the termination of fever in two of my cases. Furthermore, there may be a spontaneous disappearance of fever before the patient has had an adequate amount. The frequency of the paroxysms of fever cannot be controlled and one may get an infection with a continuous temperature. Re-inoculation of malaria is a problem for the physician while anemia is a danger for the patient.

The blood taken from a patient during fever (without an anticoagulant) immediately injected intravenously is the most effective and reliable method to give malaria. I have encountered no difficulty in giving 3 cc. of malarial blood without any regard to blood types. This method has enabled me to produce with a tertian strain thirteen consecutive takes in colored patients. Thus, my experience does not confirm the general belief that it is difficult to give tertian malaria to negroes. The addition of anticoagulants usually prolongs the incubation period, even to thirty-five days in one case. The intravenous method has the disadvantage of giving a mas-

14. Neymann, C. A.: The Effect of Artificial Fever on the Clinical Manifestations of Syphilis and the Treponema Pallidum, *Am. Psych. Jour.,* Vol. 93, No. 3, November, 1936, pp. 517-532.

15. Kopp, Israel, Boston, Mass., Personal Communication, 1937.

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sive infection with perhaps a continuous temperature for a day or two or a daily temperature rise before settling down to a tertian curve. Malaria may also be given intracutaneously, subcutaneously, or intramuscularly. The intracutaneous method has the advantage of getting a milder onset, but has the disadvantage of a greater chance for a negative reaction and a longer incubation period. At the Manhattan State Hospital[16] the mosquito is being used as the infecting agent. It is felt that the milder malaria allowed to run a longer course has been effective in improving their results.

After the patient is inoculated, he is allowed to remain at home, if he is well enough, until the onset of fever, at which time he is hospitalized. During his fever elevation the temperature is taken every thirty minutes. His physical reaction must be observed by a nurse and any irregularity reported to the physician who is always available.

I was taught to allow the patient to have about ten paroxysms of fever, provided he was doing well, which would give about forty hours over 102°F., and if he was not standing the fever well, the severity of these attacks was reduced with small doses of quinine (1 to 3 grains). At present I watch the hemoglobin, red blood count, and the blood pressure, and, if the patient's condition is good, the fever is continued until the symptoms disappear or the patient has run a hundred or more hours of fever without improvement.

The inductotherm procedure is to place the patient in the already heated cabinet in the morning, and to run the temperature up as fast as possible to its maximum height and hold it there the desired length of time. The patient is kept in the hospital until the following morning and some of them return to work that day. The important factor in this procedure is to watch the respiratory or cardiac function during treatment. The patient is given saline, made more palatable with lemon juice, at frequent intervals to compensate for the terrific loss of fluid. During the treatment one has set up for immediate use preparations such as intravenous fluids, coramine, metrazol, and camphor and oil to be used if necessary. It is advisable to proceed cautiously with the aged and those who have some minor pathology, and when they are not doing well the fever is terminated.

In two instances I have used inductotherm after malaria. In the case of S.B. the patient's serological response following both arsenicals and malaria was not satisfactory and he was given ten inductotherm treatments. In the case of T.B. the patient was inoculated with malaria, his family transferred him to another hospital, and the amount of fever he had could not be ascertained. He improved clinically sufficiently to take the inductotherm and he was also given ten treatments.

The mistake that I have made is the attempt to treat with the inductotherm those who were not really competent enough mentally to appreciate the necessity of treatment. They decided after a few treatments to discontinue therapy, thinking it was unnecessary or having some other reason.

One difficulty that I have encountered with the apparatus was the inability to elevate the temperature to the desired level in the case of D.J. This was manifested during the third treatment and continued during the following five treatments and was the reason for going to tryparsamide without inductotherm. The patient died after having received seven inductotherm treatments and one tryparsamide.

Cases J.R. and P.D. had persistent vomiting following the first treatment, but after intravenous fluids and rest they were able to continue with a satisfactory series. C.T. had persistent vomiting after some of his inductotherm treatments and developed renal pathology. After eight treatments W.C. had severe tremors with marked unsteadiness which lasted three months.

In this study I have approached my problem in retrospection. The tables give a few pertinent facts in regard to the patient's age, time of onset, previous drug treatment, blood Wassermann and spinal fluid Wassermann before treatment, the cases are classified diagnostically, the treatment is recorded, what has happened to the presenting symptoms has been noted, the results have been classified as remission, improved, unimproved, and death, and the time of death in relation to treatment is noted.

Fifty-six cases are reported, because they are inclusive of all cases who have been put on fever therapy and in whom the fever treatment has been terminated or completed regardless of the reason. J.W. was a case of gonorrhea (ten years' duration).

16. Kusch, Ernest, Milam, D. F., and Stratman-Thomas, W. K.: General Paresis Treated by Mosquito-Inoculated Vivax (Tertian), *Amer. Jour. Psych.*, Vol. 93, No. 3, November, 1936.

E.P. had a chancre, acute G.C., and buboes, and was given malaria at the request of his doctor. D.C., a tabetic, was shot after his first paroxysm of fever. B.M. had a clinical picture of tabes with G.C. Thus I shall reduce the series by these four cases, because three of them did not have neurosyphilis and one was shot at the beginning of the treatment.

Malaria was given to forty-two cases with one death (G.N.) during fever. This patient was brought to the hospital in a confused, negative state with a psychiatric picture and a poor physical status. Another (E.B.) died four months after malarial treatment, having been vigorously treated with drugs five years previously. He was given only thirty-one hours as he reacted poorly. The large number of those who improved in this series of malaria may be due to the frequency of the tabetic neuritic syndrome which is known to respond well to fever.

Remission	22
Improved	10
Unimproved	8
Died	2
Total	42

The electropyrexia series of nine inductotherms and one diathermy appears worse than it actually is. In the group of seven inductotherms, cases W.H., J.T., and E.S. took three, three, and one treatments, respectively. W.H. was stopped due to his poor tolerance both during and afterward, while J.T. and E.S. chose to stop treatment. C.T.'s treatment was discontinued after the tenth without improvement, as he developed a nephritis. The death of D.T., who had had seven progressively unsatisfactory treatments and then one tryparsamide, may have been due to an arsenical encephalitis.

Remission	2
Improved	0
Unimproved	4
Died	1
Total	7

The group of three that had both malarial and artificial fever were cases in which malaria had not been entirely effective. Death occurred in the case of J.M., whose malarial fever was stopped after three chills because of his poor status. He was later given diathermy at another hospital and this too had to be discontinued after twenty-three hours of fever 103°F. and above.

Remission	2	
Improved	0	
Unimproved	0	
Died	1	
Total	3	
CASES OF PARESIS		
Remission	10	
Improved	1	
Unimproved	7	
Died	3	
		21
CASES OF JUVENILE PARESIS		
Improved	1	1
Total Number of Paretics		22
CASES OF TABES		
Remission	11	
Improved	4	
Unimproved	3	
Died	0	
		18
CASES OF TABO-PARESIS		
Remission	4	
Improved	2	
Unimproved	1	
Died	0	
		7
CASES OF NEUROSYPHILIS*		
Remission	2	
Improved	1	
Unimproved	2	
Died	0	
		5
CASES NOT INCLUDED IN SERIES FOR ANALYSIS		
One case shot after four hours' fever	1	
One case of chancre—acute G. C.	1	
Two cases of chronic G. C.	2	
		4
SUMMARY OF RESULTS		
Remission	27—	52%
Improved	9—	17%
Unimproved	13—	25%
Died	3—	6%
		52—100%

This study has re-impressed me with the results of adequate and inadequate treatment.

*Refers to interstitial syphilis.

Case	Age Syph. Con.	Previous Treatment	Blood Wass.	S. F. Wass.	Diag.	Treatment	Results
W. S. 43 yrs.	24	Yes.....	+	+	Paresis.....	Malaria 33 hrs.†	Depression gone and no memory defect. Remission.
R. C. 51 yrs.	28	Yes.....	0	+	Paresis.....	Malaria 96 hrs.	Mentally clear. Remission.
W. C. 43 yrs.	?	Yes.....	+	+	Paresis.....	8 Ind.	Tremors after inductotherm for 3 mos.; since has been well. Remission.
T. H. 41 yrs.	32	Yes.....	+	+	Paresis.....	Malaria 58 hrs.	Emotionally stable; mentally clear. Remission.
L. W. 27 yrs.	22	Yes.....	+	+	Paresis.....	Malaria 90 hrs.	Depression and headaches gone. "I feel like a new man." Remission.
R. W. 17 yrs.	16	Yes.....	+	+	Paresis.....	Malaria 50 hrs.	Mental confusion, headaches, and dizziness gone. Remission.
W. C. 33 yrs.	.....	Yes.....	+	+	Paresis.....	Malaria Estivo-autumnal* 200+ hrs.	Mentally clear. We had a very difficult time stopping malaria. Remission.
S. B. 31 yrs.	17?	Yes.....	+	+	Paresis.....	Malaria 100 hrs. 10 Ind.	Memory good; mentally clear. Remission.
B. D. 35 yrs.	35	Yes.....	+	+	Paresis.....	Malaria 105 hrs.	Mentally clear; no headaches; no nausea. Remission.
T. B. 42 yrs.	?	Yes.....	+	+	Paresis.....	Malaria ? hrs. 10 Ind.	No more grandiose delusions. Remission.
C. M. 39 yrs.	39	Yes.....	+	0	Paresis.....	Malaria 101 hrs.	Depression, mental confusion, headaches improved. Gained 12 lbs. Improved.
R. M. 40 yrs.	23	Yes.....	0	+	Paresis.....	Malaria 52 hrs.	Unimproved.
G. T. 33 yrs.	31	Yes.....	+	+	Paresis.....	Malaria 116 hrs.	Grandiose. No change. Unimproved.
J. J. 26 yrs.	20	Yes.....	+	+	Paresis.....	Malaria 30 hrs.	Later more fever. Unimproved.
F. N. 42 yrs.	37?	Yes.....	+	+	Paresis.....	Malaria 8 hrs.	Unimproved.
J. T. 57 yrs.	?	No.....	+	+	Paresis.....	3 Ind. Refused to continue.	Unimproved.
E. S. 52 yrs.	?	Yes.....	+	+	Paresis.....	1 Ind. Refused to continue.	Unimproved.
G. N. 37 yrs.	15	Yes.....	+	+	Paresis.....	Malaria 45 hrs.	Returned from road for mental observation; was negativistic; would not answer questions; in restraining sheet most of time. Died.
D. J. 45 yrs.	37?	Yes.....	+	+	Paresis.....	7 Ind. Tryp. 9-4-37.	Unimproved. Last treatment Aug. 28, 1937; Sept. 7, 1937. Died.
J. M. 36 yrs.	26	Yes.....	+	+	Paresis.....	Malaria 3 chills Diathermy 23 hrs.	Mal. Jan. '31. Diath. May '31. Died Sept. '31.
E. B. 54 yrs.	?	Yes.....	+	+	Paresis.....	Malaria 31 hrs.	Unimproved and 4 mos. after treatment died.
J. B. 9 yrs.	Cong.	Yes.....	+	+	Juvenile Paresis.	Malaria 35 hrs.	More corrigible. Improved.
P. D. 39 yrs.	23	Yes.....	0	+	Tabes.....	9 Ind.....	Weakness and pain gone. Remission.
J. R. 40 yrs.	?	Yes.....	+	+	Tabes.....	6 Ind.....	Headaches and depression gone. Remission.
H. B. 26 yrs.	26	Yes.....	+	+	Tabes.....	Malaria 104 hrs.	Pains in legs and back of head gone. Remission.
O. R. 22 yrs.	22	Yes.....	+	0	Tabes.....	Malaria 101 hrs.	Pains in back, legs, and arms gone. G. C. well. Remission.

†Hours noted under malaria represent fever of 102° F. and over by mouth.
*This blood was taken from a patient with the diagnosis of tertian malaria.

Case	Age Syph. Con.	Previous Treatment	Blood Wass.	S. F. Wass.	Diag.	Treatment	Results
E. R. 25 yrs.	25	Yes.....	+	0	Tabes.....	Malaria 102 hrs.	Pains in legs, headaches, body pains, dizziness, vertigo gone. Remission.
P. R. 36 yrs.	35	Yes.....	+	0	Tabes.....	Malaria 76 hrs.	Pains down spine, burning in heels, nocturnal headaches gone. Gained 25 lbs. Remission.
J. S. 27 yrs.	23	Yes.....	+	+	Tabes.....	Malaria 85 hrs.	Roaring in ears, headaches, and pains gone. Remission.
H. R. 34 yrs.	25	Yes.....	+	+	Tabes.....	Malaria 93 hrs.	Headaches, insomnia, numbness, and pains gone. Remission.
J. W. 19 yrs.	18	Yes.....	+	0	Tabes.....	Malaria 81 hrs.	Headache, insomnia, back and leg pains gone. Remission.
G. D. 31 yrs.	31	Yes.....	+	+	Tabes.....	Malaria 86 hrs.	Body, leg, and head pains gone. Remission.
O. L. 40 yrs.	31	Yes.....	+	0	Tabes.....	Malaria 84 hrs.	Headaches and leg pains gone. Remission.
N. F. 23 yrs.	23	Yes.....	+	+	Tabes.....	Malaria 103 hrs.	Headaches, memory, pains better. Improved.
R. H. 21 yrs.	21	Yes.....	+	.....	Tabes.....	Malaria 105 hrs.	Pains in legs, arms, and body better. Improved.
H. Y. 41 yrs.	33	Yes.....	+	0	Tabes.....	Malaria 47 hrs.	Less pains in legs. Feels better. Gained 10 lbs. Improved.
E. B. 22 yrs.	22	Yes.....	+	0	Tabes.....	Malaria 89 hrs.	Headaches, pains, vertigo better. G. C. Well. Improved.
C. T. 33 yrs.	?	Yes.....	+	+	Tabes.....	10 Ind.	Inductotherm stopped due to kidney pathology developed during treatment. Unimproved.
W. B. 21 yrs.	15	Yes.....	+	0	Tabes.....	Malaria. 83 hrs.	Unimproved.
J. H. 37 yrs.	35	Yes.....	+	0	Tabes	Malaria 19 hrs. Jaundice.	Leg and stomach pains; vertigo; jaundice. Fever stopped. Unimproved.
G. M. 29 yrs.	29	Yes.....	+	+	Tabo-Paresis.	Malaria 103 hrs.	Confusion, depression, body pains well. Remission.
K. A. 29 yrs.	29	Yes.....	+	+	Tabo-Paresis.	Malaria 88 hrs.	Headaches, dizziness, pains gone. Remission.
G. T. 35 yrs.	31	Yes.....	+	0	Tabo-Paresis.	Malaria 48 hrs.	Headaches, vertigo, pains, weakness gone; no personality disturbance. G. C. well. Remission.
S. C. 48 yrs.	23	Yes.....	+	0	Tabo-Paresis.	Malaria 113 hrs.	"Jumping" pains in back and head gone. Vertigo gone. Gained 10 lbs. Remission.
G. D. 50 yrs.	50	Yes.....	+	0	Tabo-Paresis.	Malaria 60 hrs.	Headaches, dizziness, nervousness, depression better. "I feel much better now. I can think better." Improved.
L. M. 24 yrs.	23	Yes.....	+	0	Tabo-Paresis.	Malaria 89 hrs.	Headaches, insomnia, dizziness, pains better. Improved.
J. M. 30 yrs.	29	Yes.....	+	0	Tabo-Paresis.	Malaria. Jaundice 5 days after malaria given.	Depressed, poor hearing, headache and back pains continued. Jaundice. Fever stopped. Unimproved.
A. H. 20 yrs.	19	Yes.....	+	+	N. Syph....	Malaria 103 hrs.	Headache gone. Remission.
J. C. 27 yrs.	20	Yes.....	+	0	N. Syph....	Malaria 48 hrs.	Internal squint of left eye improved. Weakness and numbness of left arm gone. Remission.
B. F. 33 yrs.	23?	Yes.....	+	+	N. Syph. (Transv. Myelitis)	Malaria 75 hrs.	Return of sphincter control. Able to walk with help. Improved.
R. C. 35 yrs.	?	Yes.....	+	+	N. Syph....	Malaria 51 hrs.	Unimproved.

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Case	Age Syph. Con.	Previous Treatment	Blood Wass.	S. F. Wass.	Diag.	Treatment	Results
W. H. 36 yrs.	34	Yes.....	0	+	N. Syph.	3 Ind. Reacted poorly.	Unimproved.
E. P. 26 yrs.	26	Yes.....	+	.....	Primary Syph.	Malaria 107 hrs.	Sore, buboes, and G. C. well. Remission.
B. M. 19 yrs.	18	No.....	0	.....	G. C. Tabes?	Malaria 93 hrs.	Headache and pain in extremities gone. Remission.
J. W. 43 yrs.	Chronic Wasser	gonorrhea for 12 years. mann always negative.		.....	.....	Malaria 89 hrs.	Headaches, nervousness, depression, pains in body better. Improved.
D. C. 32 yrs.	24	Yes.....	+	0	Tabes	Malaria 4 hrs.	Killed in gun battle.

DISCUSSION

DR. E. T. TERRELL, Williamsburg: In the presentation of this paper, Dr. Shield has given us a most interesting study of a subject that has been highly controversial since the advent of electropyrexia a few years ago. Until we have a much clearer concept of the exact mechanism of fever therapy there will be many sound and reasonable arguments as to the relative merits of malaria and electrically produced elevations of temperature in the treatment of paresis. It has been my experience in a review of something over a hundred cases so treated to agree with the speaker, that the best results are to be derived from malarial therapy.

Dr. Shield has made one point which I would like to stress strongly, that is, a careful inquiry into the nature of malarial paroxysms experienced by the patient from whom the inoculation was made. I have also encountered one particularly malignant strain of malaria which was borne very poorly by the patient and which required repeated administrations of quinine, both orally and intravenously before its final eradication from the blood stream. Also I believe a most careful physical examination of the donor of malarial blood is essential. Cases have been reported of severe septicemia presumably produced by the inoculation from an individual who at the time had a small furuncle.

In a recent paper on this subject, Dr. C. O. Cheney has grouped his cases according to the predominating mental reaction prior to treatment, namely, simple dementing, manic-depressive and schizophrenic. This classification, applied to the cases with which I am familiar, shows that by far the best results are obtained in those patients who showed a manic or grandiose reaction.

Quoting Neymann, it has been stated that electropyrexia is non-toxic and for this reason can be better borne by the patient. It has been my experience that, with equal elevations of temperature, the patient is much more apt to enter a state of delirium from electrically produced fever than from malaria. Also in regard to the relative dangers of the two methods, I would like to cite one specific case. An ambulatory patient was given a series of temperature elevations by means of the diathermy and at the end of the series returned to his occupation apparently much benefited by the treatment. He returned two years later for a second series of treatment. At this time the inductotherm was used and all went well until the termination of the third treatment. When the patient's temperature reached 104.5 degrees he suddenly went into a state of embarrassed respiration, weak and erratic cardiac action, and coma. The machine was cut off, the patient quickly removed from the treatment bag and given circulatory stimulants. In spite of the application of cold sheets, the temperature continued to rise until it reached 109.8 degrees. We were never able to reduce the temperature below 107 degrees before the fatal termination, which occurred six hours later. Unfortunately, a request for a post-mortem examination in this case was refused. I am extremely interested to know whether any similar experience has been encountered during the application of fever therapy.

—— (Reporter failed to catch name): Gentlemen, I am frank to admit that I do not know the best form of treatment for neurosyphilis. I rather think the best form is the way I heard of a man treating his girl. He hit her over the head with a large stick. Then, not being quite sure that she was dead, he shot her in the head. Then, still not being quite sure, he pulled out his pocket knife and stabbed her in the heart.

I think malaria has certain disadvantages. At times it is difficult to stop the malaria, and probably the things you stop it with are not any too good for the patient as a whole. Then, again, we do not know what malaria does to the heart and spleen and kidneys and other organs. Bad malaria is a bad thing, as we know who have seen it when we were boys. There is a good deal of cachexia and other things that follow malaria.

Diathermy is uncertain and does not get results. The inductotherm can be controlled very well, but I do not believe that alone it is very much better than malaria. I believe, however, it is a very good treatment, because, as Shield has suggested, you can give arsenical treatment during the fever or at the end of the fever.

The thing is not settled. If a temperature of 106 kills the spirochete, why does not one treatment kill them? The theory is that they wrap themselves up in cellophane or something else, so you give other treatments in the hope that they will poke their heads out and be killed. Some advocate giving up to twenty treatments.

The age of the patient is a factor. It is not wise to give heavy arsenical treatment to patients of advanced age. As to heat therapy, better not give too heavy heat treatments to patients sixty-five years of age or older, because their arteries do not react as quickly as those of younger patients.

I had not heard or read Dr. Shield's paper before and did not know what he was going to say, but I feel that he has worked this up extremely well. On the other hand, we must realize that there are a good many cerebrospinal cases that are too old for much treatment of any kind. Brain cells are destroyed; cord cells are destroyed; and nobody but God can put back destroyed nerve cells, and He does not do it. But we also realize that there are perivascular constrictions and toxic conditions that are affecting some of the cells, and those cells can be brought back by treatment. We have had some cases in which there was very marked paretic speech change. Those cases have been brought back to normal, so far as I could tell.

IMPLANTATION OF COSTAL CARTILAGE FOR THE CORRECTION OF NASAL DEFORMITIES.*

ELBYRNE G. GILL, M. D., F. A. C. S.,
Roanoke, Virginia.

Various transplants have been used in rhinoplasty, such as tooth brush handles, ivory, paraffine and celluloid, in place of autogenous grafts. Since the World War the pendulum of opinion has swung from isogenic material to autogenous grafts. These grafts may be classified as follows:

1. Costal cartilage;
2. Cartilage and bone;
3. Bone.

The disadvantages of autogenous bone grafts are

1. Difficulty in shaping the graft;
2. More easily infected;
3. Is slowly absorbed.

The advantages of autogenous costal cartilage are

1. The graft continues to be nourished;
2. It lives without changing size;
3. More resistant to infection;
4. Is easy to obtain;
5. Can be readily shaped;
6. Is available in various sizes, and excess amounts can be stored for future use.

TYPES OF DEFORMITY AND INDICATIONS FOR CORRECTION

1. Saddle nose
   (1) Those caused by syphilis;
   (2) Those resulting from traumatism, operations on the septum and septal abscess.

The indications for the correction of nasal deformities may be classified as follows:

1. Cosmetic;
2. Functional;
3. Economic factor.

The nose is not only the most conspicious feature of the face, but it has also a very important function in its relation to respiration and the proper aeration of the sinuses.

The restoration of the nose is important to both men and women in securing a position in the business world. Even though the deformity may be due to injury, these people inevitably bear the stigma of being a syphilitic suspect, for the lay public always associates saddle back nose with syphilis.

TECHNIQUE IN OPERATION

Anesthesia may be local or general. Our preference is general anesthesia. A vertical incision fifteen cm. long extends through the right rectus muscle, thus exposing the cartilage of the seventh, eighth, and ninth ribs. The right side is always chosen for the avoidance of possible concussion of the heart. The entire thickness of the cartilage may be removed, but usually it is necessary to remove only a part of it. The amount removed should be twice that indicated by the measurements for the proper correction of the deformity. Careful handling of the cartilage is important. The incision in the nose may be made

1. At the bridge of the nose;
2. The columella incision or the intra-nasal incision.

We prefer the incision at the bridge of the nose for the following reasons:

1. Direct view;

*Read before the Virginia Society of Opthalmology and Otolaryngology, Staunton, Va., May 8, 1937.

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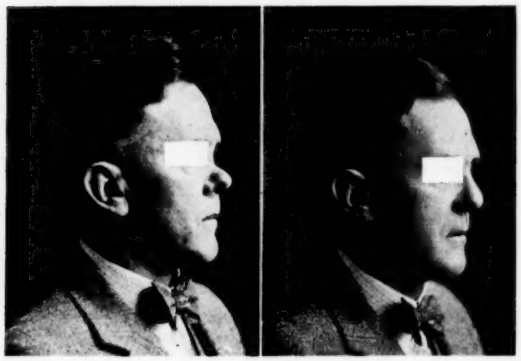
2. Sterile field;
3. Implant is more easily introduced.

Extreme care should be exercised in freeing the sub-cutaneous and loose tissue and also in the preparation of the bed of the graft. Accurate measure-



Before and After Operation.

ments must be made from the infra-glabella region to the nasal tip, and from the tip to the spine of the superior maxilla. The excess cartilage is hoarded beneath the skin under the right breast. In the event a second operation is necessary, sufficient material will be available. After the implant has been

Before and After Operation.

properly placed, the wound is closed, and sterile dressing is applied without pressure.

Complications following implantation of costal cartilage may occur as follows:

1. Infection;
2. Curling of graft.

The latter can be avoided by thorough removal of all perichondrium and accurate preparation of the bed and placing of the graft. The post-operative complications following excision of costal cartilage may develop as follows:

1. Hematoma;
2. Injury to the pleura.

Both of these complications may be avoided by exercise of careful surgical manipulation and strict observation of anatomical land marks.

Before and After Operation.

POST-OPERATIVE CARE

The right chest wall must be carefully strapped for at least one week as for a fractured rib. If infection in the nose develops, surgical drainage must be instituted at the earliest possible moment. Promptness in dealing with this complication will prevent absorption of the cartilage, thus obviating the necessity of a second operation. The patient is usually able to leave the hospital at the end of one week.

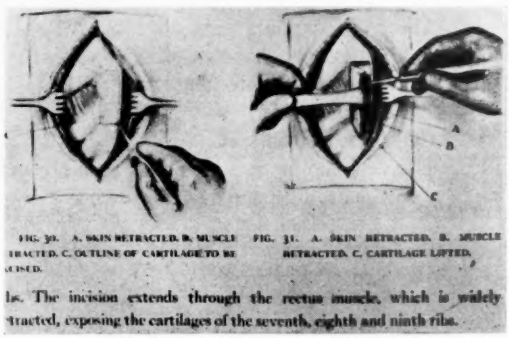


FIG. 30. A. SKIN RETRACTED. B. MUSCLE RETRACTED. C. OUTLINE OF CARTILAGE TO BE INCISED.

FIG. 31. A. SKIN RETRACTED. B. MUSCLE RETRACTED. C. CARTILAGE LIFTED.

ls. The incision extends through the rectus muscle, which is widely tracted, exposing the cartilages of the seventh, eighth and ninth ribs.

After Sheehan.

CONCLUSIONS

1. Autogenous cartilage is superior to inorganic material for the correction of nasal deformities.

2. Costal cartilage remains in place and continues to be nourished and is not absorbed.

3. Correction of the saddle nose not only serves a very definite cosmetic purpose, but oftentimes it changes the patient's entire outlook on life and restores the individual to his place in the economic and social world.

4. Correction of these deformities also restores anatomic and physiological function of the nose as relates to respiration and proper aeration of the sinuses.

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ANALGESIA AND ANESTHESIA IN OBSTETRICS.*

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The subject proposed for this evening's discussion was "Safe and Sane Obstetrical Anesthesia." I have not entitled my paper this because at the present date I do not believe there is any such thing. An analgesia or anesthesia to be safe and sane would (1) have no effect on the progress of labor, (2) would not cause restlessness, (3) would not cause any untoward changes in cardiac action or blood pressure, (4) would not be irritating to mucous membranes, (5) would not have a deleterious effect on the fetus, and (6) would leave no after-effects with mother or baby. Needless to say, this ideal has not yet been reached by any drug or combination of drugs that have been offered. Some day such a drug either will be found or synthetized, for the mother in childbirth demands relief and, as you know, when a woman wants something she generally is successful in getting it. Today, however, for the relief of her pangs of labor she must be prepared to pay occasionally her life and much more often her baby's.

Simpson in 1846 gave ether during the second stage of labor and one year later gave chloroform for the passing over the perineum of the child's head. Long,[1] I have recently learned, gave ether to his wife at the time of her second delivery in 1845, adding another first to the long list of priorities of which we Southerners well may be proud. Chloroform is still being used to a great extent in England and the South in the last moments of labor. It is not without its dangers, as the studies of Stander have pointed out. Yet, from the standpoint of the child, there is no safer anesthetic. It is quick in action, quickly recovered from, and has no unpleasant after-effects.[15] *But it is dangerous,* and for that reason in most clinics it is used not at all.

Ether is irritating to the mucous membranes and I think too slow in action to be of much benefit during the end of labor. For obstetrical operations it would seem to be the best anesthetic if we except ethylene.

Relief during the perineal stage was not enough to give the woman ease from her pain. Steinbüchal in 1902 gave her "twilight sleep." Like a wave it swept the earth. The result was disastrous, more I believe, because of the misunderstanding and mishandling of scopolamine than to the drug itself. In St. Louis thousands of cases have received scopolamine without the terrible mortality and morbidity that followed its first use.[2]

The rectal-ether analgesia technique using morphine and magnesium sulphate was used in obstetrics in 1923.[3] Ten years before, Gwathmey had proven its analgesic effectiveness. The author has used this technique, using scopolamine instead of magnesium sulphate and has liked it.

In the past decade we have had a flood of the barbiturates. Phenobarbital, sodium amytal, nembutal, ipral, dial with urethrane, pernocton, evipal, sodium alurate, seconal, have been suggested, to name a few. Emmert recently said he had achieved good results with a barbiturate by rectum.[4] Each author has extolled his particular drug and each one has been condemned in turn.

Vinyl ether was suggested by Bourne but has had very little following. I mention avertin only to condemn it.

Paraldehyde has received impetus lately both by rectum and by mouth. I have had no experience with this but do not believe I would like the disagreeable odor. Even the babies are said to have the odor of the drug on their breath for days.

At Jersey City, Cosgrove has had excellent results with spinal anesthesia but hardly anyone else

*Read before the Halifax County Medical Society, at South Boston, Va., June 10, 1937.

XUM

seems to have the temerity to imitate him. The few that have have not had the same success that he has. The author had a short experience with sacral anesthesia. This was given up after 50 per cent failures.

To go into the advantages and disadvantages of all the procedures advocated for analgesia, amnesia, and anesthesia would call for a lengthy monograph, so we will consider only a few points.

No woman should suffer during childbirth more than is absolutely necessary. The experience of Nielsen[5] that most women want to go through childbirth without relief has not been that of other physicians. Neither can I believe the psychic aftereffects of having had relief are as disastrous as she has pictured. True, it would be best for the sake of the baby if all women were delivered without analgesia or anesthesia. I do not think the same about the mother. The nervous dread, the sufferings, sometimes for hours, the tearing, splitting pain of the second stage should and can be helped. In Russia the highest order of merit obtainable, the order of Lenin, was given to Lourje for the popularization of anesthesia during childbirth. What physician would allow a kidney stone to pass without crying for assistance. The comparison is crude, but think of it.

Parturition today is often compared to that of former years and centuries. The primitive or jungle woman is supposed to have had easier labors and recovered from them quicker. It seems unfair to compare a people in close contact with nature, inured to pain, whose psychology is one of fatalism, to our present-day race of "civilized" people whose environment and life have made them seek to escape unavoidable pain. The modern woman perhaps has as much hardihood as the bush woman but her psyche is different. Even today, in the lowest stratum of society we find less need of drugs than in the more cultured. The author has been surprised many times at the ease in which women can have their babies and at the quickness of their recovery. But the primitive woman was not wholly without pain. A reindeer bone found in a cave in Europe pictures a parturient woman with a reindeer standing over her. We can assume that it was hoped that the strength of the animal would pass into the laboring one and help[6] her with her travail. So the cave woman must have had some pain. The Australian black is pounded, beat, cut, and knocked around when in labor until the pain of bearing a child is nothing.[7] Our great ancestors, the monkeys, sometimes cry out when delivering their young.[8] Many primitive races have very painful but very quick labors.[9b] Perhaps, though, judging from the reports of numerous observers,[7] as a whole, primitive labor was much easier than it is for our parturient today. Thoms[17] thinks there is not much doubt that it was easier, and says, "The answer is to be largely found in the fact that these races have the round or normal pelvis universally, and, furthermore, that the admixture of different racial stocks found in civilization is not present." "Be that as it may, we know that the women have a great deal of pain and it is our job to alleviate it as much as we can."[9a]

It used to be that the expectant mother did not want to suffer. Now it is the demand that she remember nothing at all of labor. The lay press, magazines and books, are partly responsible for this, preaching as they have in favor of their own pet barbiturate which will confer amnesa so that when the first pain is felt she will know nothing else until the child is suckling at her breast. And patients are demanding this. With their demands they have caused such competition among physicians that often, in their zeal to confer this amnesia, drugs are given to excess, with consequent maternal and fetal mortality and morbidity.

A favorite question that is asked the obstetrician is, "What method do you use?" Our answer to that should be that we have no method. Each obstetrical case is an entity to its self. What may be excellent for Mrs. A. might not do at all for Mrs. B. *How* are we to meet our patients' demands—and they are insistent?

First, I would say through education and psychiatry. A study at The Sloane Hospital for Women in New York gives promise of showing worth-while results from the treatment of the pregnant woman's psyche by removing her fears.

It is my firm conviction that most of the trials and tribulations the pregnant and parturient woman goes through is because of the tales her relatives, friends, and, strange enough, even strangers take the time to tell her. Why women find so much pleasure in telling the *enceinte* female of all the cases of difficult labor they have heard of, going into details with enjoyment, telling her that they hope she won't have the awful time they had, is

beyond me. No wonder when "her time" comes it is with fear that she approaches the childbirth bed. The fear may be subconscious but nevertheless it is there. It is for this reason that I insist that my patients and their husbands tell no one, not even the closet relative, of the marvelous changes that are taking place in the mother's body until it is perfectly obvious to every one what is happening. She reads no literature except under my direction. By the time her friends and relatives know about the pregnancy I hope to have cleared her mind of the misconceptions of labor and to have put her into a mood of anticipation of the wonderment of childbirth rather than the horror of it. Yet I fail more often than not. Generations of whispering and talebearing cannot be effaced in a few months.

The best way of removing the pain of labor would be to section all pregnant women at term according to a lay periodical. Believe it or not, I have heard of physicians doing this.

Rather than produce an amnesia, it would seem to be better obstetrics to remove as much of the pain as possible. And the best agent we have is morphine. Morphine given after the establishment of labor in the primiparous patient will do much to reduce the pangs of labor. It can be repeated if the end of labor is estimated to be more than six hours away. Close to the end of the first stage, a rectal injection of ether in oil would very likely ease the second stage for her. Some authors add a barbiturate with the morphine but I believe such a mixture of drugs is to be frowned upon. Both are depressing, and the ether in oil adds to this. Arnold,[16] after trying many different methods of anesthesia, is coming back to the Gwathmey technique. This method of analgesia is not, however, without danger. There is always the possibility of postpartum hemorrhage, and very often because of the injudicious use of morphine there are "blue" babies.

The formula of the ether-oil is as follows: Ether, two and one-half ounces, quinine alkaloid twenty grains, alcohol forty-five minims, olive oil *q. s. ad* four ounces. I think it wise to have a second formula, using only ten grains of quinine for those cases in very active labor having hard contractions. Some advocate leaving the quinine out all together, which is commendable. The technique used by the author, which has been the usual one, is: A hot plain water enema is given soon after the patient starts into labor. Morphine and scopolamine are given to control the patient until the first stage is about three-fourths over. Morphine is not given if labor is predicted to end in six hours. With the patient on her side the buttocks are coated with lubricating jelly. Through a catheter inserted six to eight inches into the rectum, four ounces of the mixture are given, after having first instilled one ounce of olive oil. One ounce of olive oil is given afterwards. The whole amount of fluid is passed into the rectum by milking the catheter which is then clamped and quickly removed. A pad is held over the rectum until the patient has had three pains.

This procedure has been used extensively in the home[3] and very few untoward results have been reported. It has a wide margin of safety if carefully managed. There is danger present, though, and perhaps it should be a hospital procedure.

In the use of the barbiturates, which give only an amnesia, restlessness is the main contraindication. At present nembutal, or pentobarbital, is the favorite barbiturate having usurped the place of sodium amytal. Sodium amytal has more of a depressing action and takes longer for its excretion. Nembutal, however, is the more toxic of the two. Side boards are often necessary on the bed, and an attendant must be present at all times. After the experiences with pernocton, intravenous injection is not used except in isolated instances. The author, as well as others, has overcome this restlessness with small doses of morphine. Some recommend rectal analgesia as a way of preventing it, though very often, because of the uncooperativeness of the patient, this fails. It is generally recommended that huge doses be given at the induction of the amnesia, Lull[10] using nine grains of nembutal at the beginning. Four and one-half grains seem to be the average. It would seem to me that in view of the reports of Willcox[11] in which collapse has occurred after only three grains, an initial dose of one and one-half grains is preferable, giving us a chance to find out the action of the drug on the patient. (By making holes in the capsules quicker action is obtained.) Scopolamine is used as an adjuvant by many. Here, again, hospitals are the best place. Many of these labors have to be terminated by forceps because of the restlessness making a sterile draping of the patient difficult except under anesthesia. One can make no generalizations as to.

how the barbiturates will affect the patient. One primipara to whom I gave morphine and twelve grains of nembutal said she recalled every thing that happened prior to delivery; and she did. Another, a multipara, to whom I gave only three grains had complete amnesia, talked as one intoxicated and, really, from what she said I am thankful her husband wasn't there. Next day she remembered nothing of the six hours labor she had had.

If someone would remove the odor from paraldehyde, judging from published reports, there are great possibilities in its use.

Most of the pain of the second stage of labor can be removed by elective low forceps and episiotomy. This was first advocated by DeLee. I firmly believe in it. Not only do I think it better for the mother but also for the baby. *But*—quoting from Dennen,[12] "Even though easy cases can be handled easily and safely with forceps there are dangers connected with the elective procedure that make it unsafe for general use. * * * A forceps delivery is a surgical procedure and should be treated as such. * * * Good anesthesia is important. * * * Hemorrhage is an ever-present danger. * * * Asphyxia of the baby * * * ." *Unless one is prepared and trained to handle any emergency that may arise and is prepared to use modern methods of resuscitation of the newborn it is better to let the patient deliver spontaneously.* I offer this as an axiom. I am not speaking of indicated operations but elective procedures.

Local anesthesia should be used more. DeLee asks, why anesthetize the whole body when we need it in only a small part. It is not depressing and is not irritating. It can be employed to great advantage, Bradford has shown, when inhalation anesthesia would seem unwise. By familiarizing ourselves with the technique, more of us can be of greater service to our patients.

What about the patient who is delivered in the home? Although hospitalization of obstetric patients has proceeded by a yearly increasing percentage, thousands of women are being delivered in the homes. The vast majority of these are handled by the general practitioner who has had no special obstetrical training. These patients surely are entitled to their analgesia and anesthesia even as their sisters in the lying-in beds with their numerous attendants. Many of them, however, suffer just as their mothers suffered and the only surfeit offered is that, "It is nature."

Edwards[13] uses pentobarbital (nembutal) for the first stage, waiting until the pains are less than five minutes and "hurting considerably." To control the restlessness he uses chloroform, often to such an extent that pituitrin has to be given to flagellate a relaxed uterus back into action. His initial dose is six grains. That seems like poor obstetrics. He does not worry about the restlessness because, as he says, "The beds found in these homes are usually so low there is not much danger if the patient should happen to fall out." I feel that nembutal in the home should be used in very small doses.

Brittain and Hobbs[14] control the first stage of labor with morphine, sometimes combined with a barbiturate. At the beginning of the second stage they start giving ether and pituitrin, "not over three minims at a dose and never more often than fifteen minutes." Apparently such a thing as pituitary shock is not thought of. If the anesthesia is so deep that pituitrin is needed to stimulate the uterus in order to consummate delivery we had better leave off the anesthesia. I disapprove strongly of medical forceps.

For the primipara morphine is very helpful in the first stage. It may be combined with small doses of barbiturates or scopolamine and it is not necessary to wait until she is hurting considerably. If labor is long it may be repeated. During the perineal stage small "whiffs" of chloroform will give much relief even if the patient is not unconscious. Ether is not quick enough in its action to be of much benefit. Neal says he gives "whiffs" of it sometimes but only as a placebo.

The multipara and the woman in premature labor are more of a problem. Morphine would be dangerous because of its effect on the fetus; in the former the time element, in the latter the immaturity of the respiratory center. It is surprising indeed sometimes, what bromides and understanding encouragement can do to make the labor easier. Small doses of barbiturates will help; also rectal analgesia, if the physician knows how to use it and appreciates its dangers. At the delivery light chloroform anesthesia will ease the tearing pain. No chloroform is given if rectal analgesia has been used.

In recommending chloroform, I am assuming that the practitioner will not use it in cases of pre-eclampsia, and that only enough will be used to

deaden the pain at the actual passing over the perineum of the child's head. Even if Potter[15] uses it to the extent of surgical anesthesia and in his extensive practice over many years has had no fatalities, we must still be cognizant of its dangers.

SUMMARY

Although we have at present no "safe and sane" obstetrical analgesia and anesthesia, we must answer our parturient's cry for assistance during her travail. With the agents at hand we must recognize their shortcomings and dangers and use them, not by any method, but by deliberate planning, keeping the interest of the patient always foremost. Even by judicious use of the drugs we have, sometimes the end-result will be unhappy. Prenatal encouragement and a disspelling of fears as much as possible perhaps is a potent factor in rendering labor easier.

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TRAUMATIC LACERATION OF THE INFERIOR VENA CAVA, WITH RECOVERY—CASE REPORT.

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A rather thorough investigation of surgical literature discloses a number of instances of accidental perforation of the inferior vena cava; most of them have occurred during a difficult right nephrectomy; a few, however, are the result of small perforations due to bullets and knife points. I have not been able to find a single case of extensive traumatic laceration and hence my reason for reporting this unique case. Such cases are either very rare or else they have been slow in getting into the literature.

Cole (*Annals of Surgery* for 1917) reported an accidental injury to the inferior vena cava during the removal of a large retroperitoneal tumor. The laceration was so small that a single stitch controlled the hemorrhage, and after a stormy convalescence the patient recovered. Condict (*Annals of Surgery* for 1924) reported a case of scissors-perforation of the inferior vena cava, colon and ileum with recovery. Priestley and Walters (*Proc. of Staff. Meet. Mayo Clinic*, 1933) reported opening the vena cava in four cases while doing a nephrectomy, in two of which the opening was intentional for the purpose of removing malignant tissue invasion, and in the other two an accidental tear was made. The tears were apparently small in as

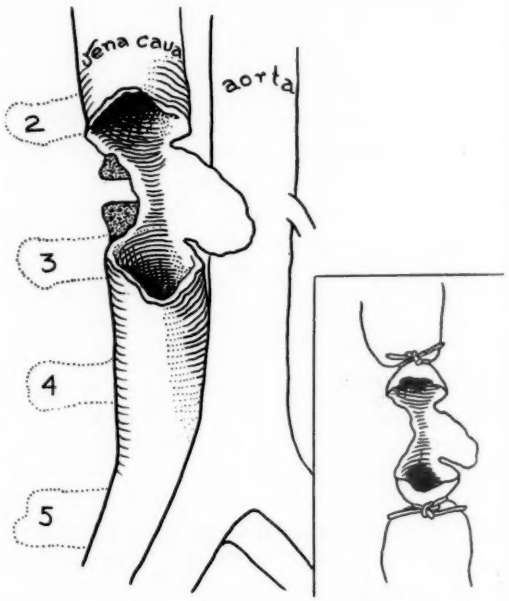
much as the bleeding was controlled by clamp or suture. All four of these cases recovered. Sheppe (*J. A. M. A.* for 1922) reported a case of bullet wounds of the small intestine and a nick in the stomach. The bullet finally rested in the anterior wall of the vena cava. During attempted removal it eluded the surgeon's grasp and disappeared. The perforation was closed by suture. Autopsy revealed a thrombus at the site of perforation, death being due to peritonitis.

Nine cases of complete ligation of the inferior vena cava for the treatment of severe puerperal utero-pelvic phlebitis have been reported by Walters and Priestley. They also quoted Pfaff who reviewed the literature and found nineteen cases of deliberate ligation incident to the removal of renal malignancy with a mortality rate of 32 per cent.

As a field for surgery, the inferior vena cava is a poor one. With the possible exception of a deliberate opening for a tongue of invasive new growth all surgical attempts in this field are enforced by that most urgent and alarming of surgical "calls," hemorrhage—a situation comparable to death in that we are never prepared for it.

Case Report: M. L. B., aged ten years, was admitted to St. Luke's Hospital, July 20, 1934, having come sixty-five miles by ambulance to the hospital. Three hours before arrival she had been given morphine sulphate, gr. one-fourth. Examination showed the patient to be mildly shocked, in a state of deep narcosis, and to have a rapid pulse. When the towel was removed a loop of transverse colon about six inches long was seen protruding from a circular wound, one and one-half inches in diameter, at McBurney's point.

Local preparation for operation was deferred until the patient was anesthetized. During this she struggled and blood spurted about eighteen inches above the wound. Preparation from this point on was hurried. On opening the abdomen, there was a gush of blood. Numerous mesenteric rents seemed not to be bleeding yet the abdomen continued to put forth more blood than it was possible to mop away. Obviously so massive a hemorrhage could come only from one of the great vessels. The anesthetist reported the patient was "doing badly." The wound was hastily enlarged; finally all the small bowel was lifted and on further sponging a rent was seen directly behind the umbilicus. The peritoneum was so widely torn that the rough abraded bodies of the second and third lumbar vertebrae were visible and could be felt. On moving one of the many blood saturated gauze packs a "hissing" sound was heard. Just as I had satisfied myself that the inferior vena cava was practically cut in half by a J-shaped laceration and I had applied forceps to either end, the patient became pulseless and a second later stopped breathing. Artificial respiration at first seemed useless. After a lapse of about two minutes she breathed again. In the meantime with No. 1 plain catgut a hurried ligation of the inferior vena cava above and below the



J-shaped laceration of inferior vena cava showing ligation above and below the point of laceration; also abraded bodies of vertebrae.

rent was done. The abdomen was quickly closed as she breathed irregularly. A hurried transfusion was done.

The following morning the patient was alive but white and practically pulseless. Capillary response in the toes was absent. Morphine was used freely. Fluids were withheld for fear of exciting vomiting which would increase the venous tension thereby loosening the catgut ligatures. After two small transfusions the hemoglobin reached 24 per cent on the fifth post-operative day. The legs and thighs were markedly edematous, and the epigastric vessels were prominent. Progress was slow but each day slightly more comforting. How long would the

plain catgut continue to do its work? There was numbness of the extremities, and later vague paresthesias.

Today, nearly three years later, she is perfectly normal except for numbness in the inner thigh regions.

AGRANULOCYTOSIS, WITH REPORT OF A CASE.*

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In this paper no attempt will be made to report original data or observations, but a summary of the salient features of the disease as we now know them, which differ in many respects from the conceptions of a few years ago.

Agranulocytosis is a disease characterized by fever, marked prostration, ulcers of the mucous membrane surfaces, high mortality, and marked reduction or absence of the granulocytic white cells from the circulating blood. Many synonyms have been proposed—leucopenia, malignant neutropenia, granulopenia, agranulocytic angina, granulocytopenia, etc., the latter being probably the most correct name, though not the most common one.

Vague references to a condition of this kind are found in the earlier literature, but Schultz[1] in 1922 gave the first real description, emphasizing its high mortality, lesions in the throat, prevalence in middle aged women, and the frequency of jaundice. Following his paper, several other writers took up the subject, though an extensive literature did not accumulate until comparatively recent years, when most of the progress in this disease has been made.

The etiology remained obscure following its description for the next ten years, when it was attributed to allergy, endocrine imbalance, infection, metabolic disturbance, and other causes, until 1931-34, when amidopyrine and related drugs containing the benzene ring were incriminated by Kracke,[2] Madison and Squier[3], and others following which there have been a flood of confirmatory reports. At present it appears that amidopyrine is the chief etiological agent, but various related compounds are also thought to be capable of producing the chain of symptoms giving rise to the disease, among which compounds are dinitrophenol, novaldin, cinchophen, quinine, allonal, peralga, arsphenamines, gold salts, and certain barbiturates, and, more recently, the new and very popular drug sulfanilamide is believed to have caused some cases.

Agranulocytosis seems to occur more often in middle aged women, between forty and sixty, and in the better classes, especially those associated with the medical profession, as nurses, doctors' wives, hospital employees, etc., though all ages, classes, occupations, and both sexes are subject to the disease. A probable explanation for the above is an increased use of amidopyrine by women of this age and occupation, rather than an increased susceptibility to the disease. Negroes rarely have it. The disease apparently increased in incidence from 1922 until the past two years, since when there has been some decrease, possibly due to the lessened use of the causative drugs. Rawls[4] adminstered 100,000 doses of amidopyrine to four hundred patients, four (1 per cent) of whom developed agranulocytosis, three of whom died, while the remainder were apparently not harmed in the least by the drug.

The pathological features at autopsy are: necrotic ulcers, usually in the mouth and pharynx, but may be on mucous membranes and rarely on the skin; often broncho-pneumonia; sometimes a slightly enlarged spleen; and characteristic findings in the bone marrow, which consist of normal erythrocytic elements, a great number of immature granulocytes, chiefly myeloblasts, and many plasma cells and lymphocytes, though the marrow changes vary somewhat with the stage of the disease. Evidences of a secondary septicemia are found in about half of the cases.

The symptoms and signs are fairly characteristic. The onset is usually acute, with sore throat, hyperpyrexia, and extreme prostration, chills, headache, vomiting, and muscular pains are frequent. About 50 per cent of cases have jaundice. Anemia, purpura, marked splenomegaly, hepatomegaly and generalized lymphadenopathy are rare and usually mean that there is a mistake in the diagnosis. The mucous

*From the Medical Service of Lakeview Hospital.
Read before the Southside Virginia Medical Association, Burkeville, Va., September 14, 1937.

membrane ulceration is necrotic, foul, and often resembles that of diphtheria. The ulcers are not sharply marginated, with overhanging edges, little surrounding inflammatory reaction, and may show a variety of micro-organisms. The regional lymph nodes are usually somewhat enlarged. The urine usually shows albumin and casts, and may contain bile. Most characteristic is the marked and progressive decrease in the granulocytes of the peripheral blood, which has been conclusively shown to precede the onset of symptoms. Lymphocytes are relatively markedly increased, though absolutely decreased. Total white counts usually range from 2,000 to 500, though they may be less than 100. Red cells are decreased only slightly or none at all by the disease itself, though, of course, an anemia may have been present prior to onset. Platelets are not decreased. A positive blood culture is found in one-third to one-half of cases.

The diagnosis as a rule is not difficult, if the characteristic features are kept in mind. Two main classes of diseases may cause confusion—the other blood dyscrasias and the diseases causing ulceration of the mucous membranes. Of the blood dyscrasias, "aleukemic leukemia" and aplastic anemia are perhaps most likely to cause errors, and these are best recognized by their effects on other portions of the bone marrow—the red cell and platelet forming functions being reduced and a marked and progressive anemia and/or purpura being present. Generalized carcinomatosis, lymphosarcomatosis, or Hodgkins' disease affecting the bone marrow must be considered. Biopsy from the marrow of the sternum is easily done and will settle the diagnosis if still in doubt. Differentiation from diphtheria, Vincent's angina, and other ulcerations of the mucous membranes is usually easily done by blood count, culture, and smear.

Prophylaxis is accomplished by the more careful use by the profession of the suspected drugs and their avoidance through education by the public. When necessary to keep a patient under prolonged medication with one of these compounds, white blood cell counts should be checked at regular intervals. In patients showing a marked reduction of granulocytes following the administration of one of these medications, the preparation should be promptly discontinued, even though the patient be symptom free, and warning should be given against its future use. In those patients known to have had one or more attacks of agranulocytosis, special precautions should be taken, counts should be done frequently, and treatment promptly instituted if there is any tendency to relapse, which relapse may occur spontaneously. Frequently attacks can be aborted if treatment is prompt.

Prognosis in the acute cases is always grave. Various observers report mortality rates from 33 per cent to almost 100 per cent, the majority being near the higher figure. In the more or less chronic cases with occasional relapses the outlook for the individual attack is somewhat better, perhaps because they are often less severe and the patient and physician have some warning of the danger, but the patient sooner or later usually dies of the disease. The absence of complications such as bronchopneumonia and sepsis, and relatively high counts are of better prognostic import, though some patients have been known to recover with extremely low counts. Early treatment greatly improves the prognosis.

A large number of procedures have been advocated in treatment, many of which have their enthusiastic supporters, and most of which have been subject to attacks as useless or harmful by one or more writers. Perhaps most widely advocated, especially a few years ago, was treatment with pentnucleotide K-97, prepared commercially by Smith, Kline, and French Laboratories of Philadelphia. This is given in doses of ten cc., preferably intramuscularly, sometimes intravenously, dissolved in saline, early in the disease, at least twice daily during the acute phase, and in larger amounts in the earlier stages, tapering off to smaller amounts after the patient improves and the white count returns to normal, though it must not be stopped too soon. Intramuscular doses of this drug rarely give severe reactions, but intravenous administration gives frequent, severe, and dangerous immediate reactions, which atropine is said to lessen, but will not abolish. These reactions are the chief hazard of pentnucleotide intravenously, and it is usually withheld by this route. Results with this preparation should not be expected before five to ten days.

Next to pentnucleotide, liver extract has found much favor, three cc. doses being given intramuscularly twice daily, with or without a half ounce of oral liver extract by mouth twice daily. Many believe this to be the most valuable measure. More recently, adenine sulphate, fifteen to thirty grs., has

been advocated intravenously in fifty to one hundred cc. of normal saline. This has the advantage of not producing reactions and at times gives rise to a quick response. Small doses of arsphenamine are suggested by some, though this is not wholly rational, as this drug has been known to produce the disease. X-ray over the long bones appears to give some results at times, though here the difficulty is to give a stimulating dose without producing any depression on bone marrow activity. Small, frequent blood transfusions are usually used as supportive measures, though recently some apparently harmful effects have been noted. Bone marrow extract, fetal tissue, non-specific proteins, and leucocyte cream have their supporters. Local treatment should be cautious and conservative, as more harm than good may result. Of course, adequate nursing care is of utmost importance—with maintenance of fluids, parentally if necessary; symptomatic treatment; and general supportive measures. The physician should bear in mind at all times those drugs which seem to cause the condition, and should be especially careful to see that none of these in any amounts whatsoever are given the patient. The opiates appear to be the least harmful of the sedatives and analgesics for use in these cases.

SUMMARY

Agranulocytosis is a disease which has become prominent within the past fifteen years. It is apparently due to amidopyrine and certain related compounds containing the benzene ring. It is usually easily diagnosed if suspected, but difficult to treat at any stage, especially late, and is of grave prognosis.

CASE REPORT

Mrs. C. T. M., white female, age forty-three, married, was admitted to Lakeview Hospital, July 22, 1937, with chief complaints of headache, nausea and vomiting, fever, and some sore throat, with the following history: She had been in usual health, which was only fair, until a little over three weeks before, when she awoke with a headache and some nausea, which was not unusual with her. However, she thought she had some fever and there was generalized aching with the headache, which was not customary. She remained in bed one and one-half weeks, gradually improving, and was then up and around until one week before admission, when she had an attack similar to the previous one, with violent headache. She was seen by her doctor, who suspected pyelitis because of tenderness over the left kidney, but the urine was negative. He prescribed some aspirin and a cathartic. Her husband gave her a patent medicine called "H-C" powder.

Since then she continued to have severe headache, nausea, fever, and some chilly sensations, with much prostration, aching, and malaise. Her throat was somewhat sore for the previous few days, but not markedly so. Past history was negative except for some anemia a few years ago, which had responded to jeculin, and frequent headaches.

Upon physical examination, the patient was found to be quite ill and prostrated, temperature 101, pulse 100, respiration 30. The throat was reddened, with several small necrotic ulcers, which showed little surrounding inflammatory reaction, on the soft palate and tonsils, over which was a grayish, non-adherent exudate. Lungs were clear, but the suggestion of an apical gallop rhythm was heard over the heart. There was some general abdominal tenderness, especially in the upper portion, and the border of the left lobe of the liver was barely palpable. There was a positive Babinski on the left. The urine showed two plus albumin and casts. The red blood cells were 3,780,000, hemoglobin 70 per cent, white blood cells 650, 98 per cent lymphocytes and 2 per cent polymorphonuclear neutrophils. Wassermann, blood culture and agglutinations were negative. Vigorous treatment was begun, with ten cc. of pentnucleotide intramuscularly twice daily, three cc. liver extract intramuscularly twice daily, small whole blood transfusions of 250-300 cc. daily or every other day, and saline gargles. Fluid was supplied intravenously and subcutanously. Daily white blood counts were taken, the count rising to 2,250 on the fourth day after admission, when she was clinically best, but falling the next day to 750, and remaining near this figure until death. Five days after admission a slight icterus was noted, and patient developed a severe diarrhea that responded poorly to any treatment. Eight days after admission crepitant rales were heard in the right lung base, which progressed to consolidation the next day. In spite of the oxygen tent, stimulants, and supportive measures, she died ten days after admission with broncho-pneumonia.

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VARIOUS MANIFESTATIONS OF LATE TOXEMIA OCCURRING IN SUCCESSIVE PREGNANCIES.*

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On June 8, 1936, at 8:30 P. M., a 38-year-old para vii, three weeks from term, was admitted, as an emergency, to the Obstetrical Ward of the Sinai Hospital because of marked hypertension, generalized edema, albuminuria and visual disturbances. This patient was an unregistered case, who had not been attending the prenatal clinic but was being cared for by a private practitioner.

Family History: Negative except that one grandfather had Bright's Disease.

Past History: Usual childhood diseases, including scarlet fever at two years of age without post-scarlet fever nephritis.

Menstrual History: Began at fourteen, occurred regularly every thirty days except during amenorrhea during pregnancy. Usually lasted four days with a moderate flow and without any pain. Last menstrual period September 28, 1935.

Marital History: Married nineteen years. Husband in good health. Para vii. Oldest child seventeen years; youngest six. Four living children. One child was a still-born premature infant; another died of mastoiditis at fourteen months of age.

Obstetrical History:

1. 1918.—Eclamptic toxemia of pregnancy. Was taken to the Johns Hopkins Hospital with typical convulsions at thirty weeks' gestation. Had ten ante-partum convulsions. Labor was induced by means of a bougie with the delivery of a still-born, premature infant. The patient had no post-partum convulsions and an uneventful afebrile puerperium.

2. 1919.—Full-term spontaneous delivery of a live child without exhibiting manifestations of a toxemia of pregnancy.

3. 1921.—Full-term spontaneous delivery of a live child without exhibiting any of the manifestations of a toxemia of pregnancy. For these two deliveries she was cared for by a private physician.

4. 1923.—During this pregnancy the patient attended the Woman's Clinic of the Johns Hopkins Hospital. Her ante-partum blood pressure varied from 130/70 to 162/105 and traces of albumin were found in her urine on two occasions. A diagnosis of low reserve kidney was made. The patient was allowed to go to term and had a spontaneous delivery of a normal child weighing 3580 grams, after a four and one-half hour uneventful labor. This puerperium was also afebrile and uneventful, the blood pressure falling to 120/80 four days' post-partum.

5. 1928.—Patient was again seen in the obstetrical

*From the Obstetrical Department of Sinai Hospital, Baltimore, Md.

division of the Johns Hopkins Hospital during the middle of her pregnancy. At this time her blood pressure was 158/100 and she had a faint trace of albumin in her urine. She was admitted to the hospital for study at which time she was seen by Dr. John Whitridge Williams who made a diagnosis of chronic nephritis complicating pregnancy and advised immediate termination of pregnancy and sterilization. The patient refused this procedure, was released from the hospital, and was delivered outside by a private doctor of a live full-term child.

6. 1930.—Patient again had manifestations of chronic nephritis complicating pregnancy but was delivered by a private doctor of a full-term live child.

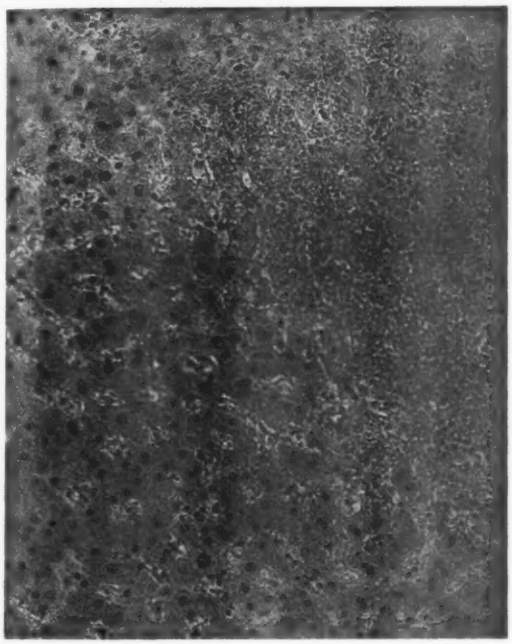

Fig. 1.—Section of the liver showing focal periportal hemorrhagic necrosis with edema of the surrounding area. In other areas not shown the periportal regions had undergone complete autolysis.

The patient was first seen at the Sinai Hospital in 1934 in a non-pregnant state, at which time she was admitted to the hospital for study with chief complaints of persistent right lower quadrant pain of one year's duration and dysuria. During her hospital stay of twelve days her temperature was normal. Her physical examination revealed a persistant hypertension with a peak of 180/100 and moderate generalized arteriosclerosis. Her eyegrounds showed dilatation and tortuosity of the veins with slight thickening and tortuosity of the arteries and definite arterio-venous compression. There were no hemmorrhages or exudates and no evidence of albuminuric retinitis. Laboratory findings were significant. The urine showed four plus albumin with many hyaline casts, granular casts and an occasional red blood cell. The Fishberg concentration test showed a maximum concentration of 1.016. The phenolsulphonephthalein test showed a 55 per cent recovery of the dye within two hours. The urea clearance test was 54 per cent of the normal average. The Addis count on the urine showed R. B. C. 1,344,000, and W. B. C. 8,064,000; casts 960,000. The cystoscopic examination was negative. The blood chemistry showed a urea of 53.92 mgm. per cent and sugar of 0.92 mgm. per cent. The serum protein was 7.90 gms. per cent with an A/G ratio of 1.3.

A diagnosis of chronic glomerulonephritis was made and the patient treated for this with a salt-poor, low protein diet, and advised not to have any more pregnancies under any circumstances.

Present Illness: As was stated at the beginning of the paper, the patient was brought into the hospital at 8:30 P. M., June 8th, as an emergency, three weeks from term, because of a fulminating, late toxemia of pregnancy. On admission, the patient had a generalized edema, especially marked about the face, eyes, hands, and feet. Her heart was moderately enlarged and a rough systolic murmur was heard over the entire precordium. The aortic second sound was more intense than the pulmonary second sound. The blood pressure was 200/100. The pulse was regular with a rate of 88 per minute. Respirations were not labored and the rate was twenty-four per minute. The lungs were clear to percussion and auscultation. The abdomen was distended by a gravid uterus with the fundus palpable 5 cms. below the xiphoid. The fetus lay in L. O. A. with the fetal heart heard in the left lower quadrant at 140 per min. The head was floating. Rectal examination revealed an undilated cervix without any effacement. The urine showed a three plus albuminuria with an occasional granular cast. There were no red blood cells, and the specific gravity was 1.006. The blood count was within normal limits. Blood chemistry revealed

a blood urea of 64 and a uric acid of 4.8 mgm. per cent.

The patient was not in labor and complained only of epigastric pains, headache, and dimness of vision. She was given morphia gr. one-fourth and slept through the night very well. At 6 A. M. a medical induction of labor with castor oil and quinine was begun. Within the next six hours the patient began to complain of very severe headache and inability to see. She talked incoherently and had some urinary incontinence. Breathing become stertorous and the patient became stuporous and perspired freely. Treatment included chloral hydrate gr. xxx

Fig. 2.—Section of the kidney showing adhesions of Bowman's capsule and thickening of the intercapillary membrane indicative of a chronic glomerulo-nephritis; also swelling and fatty degeneration of the tubular epithelium, the result of recent degenerative changes accompanying eclampsia gravidarum. In other sections, hyalinized glomeruli and marked interstitial changes remained as evidence of a chronic glomerulo-nephritis.

rectally t. i. d., and morphine sulphitee gr. one-fourth every half hour if the respirations were above 16 per min. Sixteen hours after admission the patient had her first convulsion which was typically eclamptic, and was followed by coma which lasted one-half hour. Soon after the initial convulsion uterine contractions began. At this time her blood pressure had risen to 240/140. Within the next four hours she had four more convulsions becoming cyanotic with each seizure. At the end of the four-hour period her pressure was 190/130. 100 c.c. of 50 per cent glucose was given intravenously as a diuretic as the patient had voided only once since admission, and also to serve as a source of nourishment, to combat acidosis, and to serve as a dehydrating agent. Twenty-four hours after admission her respirations became very shallow and her face, lips and nails became very cyanotic. There were definite periods of apnea so that the morphine was discontinued and carbon-dioxide and oxygen inhalations were administered. The total amount of morphine given was two and one-half grains in twenty-four hours. 250 c.c. of 25 per cent of glucose was given and the pressure dropped to 140/70 and the pulse rose to 126 per minute. Thirty-six hours after admission the patient had a spontaneous frank breech delivery of a still-born premature child that weighed 1850 grams. The third stage was uneventful and the placenta showed no nephritic changes. Blood chemistry taken soon after delivery showed a blood urea of 110 mgm. per cent, and a carbon-dioxide combining power of 45 vol. per cent.

Since the patient was anuric, 500 c.c. of 10 per cent glucose was given with fifteen units of insulin. Two hours after delivery the respirations became very bubbling, and many coarse, moist rales could be heard over the chest and there was expectoration of frothy sputum. A diagnosis of pulmonary edema was made. The blood pressure was now 100/50. The patient was given atropine gr. 1/100, and a venesection was done with the withdrawal of 200 c.c. of blood. Digalen 8 c.c. (twelve grains) was given and the patient was placed in an oxygen tent. The respirations became Cheyne-Stokes in character and the pulse weaker, the extremities cold and cyanotic and forty-six hours after admission the patient died.

The impression, based on the past history of eclampsia and nephritis, and on the laboratory findings of a high blood urea, was that the patient had died of an exacerbation of a chronic nephritis complicating pregnancy with resulting uremia and pulmonary edema. However, a complete autopsy was obtained, which showed not only a chronic glomerulo-nephritis with some more recent degenerative changes, but also the hemorrhagic peri-portal necrosis of a recent eclampsia gravidarum. The au-

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topsy also demonstrated the presence of a cardiac hypertrophy and dilatation, chronic myocarditis, coronary sclerosis and generalized arteriosclerosis. The lungs showed pulmonary edema and bronchopneumonia.

CONCLUSION

This case is of interest because it shows:

1. Various manifestations of late toxemia of pregnancy occurring in successive pregnancies.

2. Eclampsia does give origin to chronic nephritis in certain instances.

3. Eclampsia may recur at a subsequent pregnancy many years later.

4. The ultimate fate of repeated pregnancies in the face of toxemia is death to the patient.

5. How closely eclampsia and nephritis with pregnancy can resemble each other, so that only by an autopsy can one distinguish the one from the other and that sometimes they exist concurrently, as in this case.

Monument Street and Rutland Avenue.

THE USE OF SULFANILAMIDE IN MENINGOCOCCUS MENINGITIS WITH AN UNUSUALLY RAPID RECOVERY IN ONE APPARENTLY HOPELESS CASE.

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The three cases herein described were referred to the medical service of the Jefferson Hospital by Dr. W. N. Breckinridge of Fincastle, Virginia, with a diagnosis of meningitis.

Case 1.—On October 4, 1937, L.— H.—, a twenty-year-old white man, was admitted to the medical service of the Jefferson Hospital from a nearby county jail complaining of severe headache, nausea, and stiffness in his legs and neck. Two weeks before admission this man had developed a severe head cold with coryza, sneezing and "stuffiness in his head." This cold had almost cleared up when, four days before admission, the patient began to complain of stiffness and soreness in his legs. Three days before admission he was nauseated, felt generally uncomfortable, and had a severe headache. Two days before admission be complained of stiffness and soreness in the muscles of his neck. The headache continued to be quite severe. Past history and family history non-contributory.

Admission Physical Examination—T. 102.6 degrees F.; P. 90; R. 20; blood pressure 130/70.

General appearance: A well-nourished, well-developed, white male who was lying quietly in bed on his right side with his knees drawn up. Respirations were deep and regular. Skin was dry and hot. Over his chest and abdomen were numerous small, irregular hemorrhagic spots which did not blanch on pressure.

Reflexes: Kernig sign positive. Ankle jerks and knee kicks very active.

The rest of the physical examination was essentially negative.

Laboratory Findings.—Blood: Hgb. 98; RBC, 4,360,000; WBC, 9,400; 76 per cent neutrophiles; 15 per cent small lymphocytes; 6 per cent large lymphocytes; and 3 per cent eosinophiles.

Urine: Neutral; Sp. gravity 1,012; Microscopic —Pus 3 plus; blood (chemical) 2 plus; albumen 1 plus.

Spinal fluid: Under increased pressure—3,860 cells per cu. mm. (mostly polymorphonuclears); globulin, trace; sugar, trace. Smears showed gram negative diplococci. Cultures yielded diplococcus intracellularis.

Treatment: The patient was given an initial dose of forty grains of sulfanilamide, and thereafter sulfanilamide, grains 15, and bicarbonate of soda, grains 10, q.4.h., to doses 10. Then he was given sulfanilamide, grains 10, and bicarbonate of soda, grains 10, q.4.h., to doses 19, making a total of 380 grains of sulfanilamide over a period of five days. Spinal fluid withdrawn the day after admission had a cell count of 2,500 with a trace of globulin. No organisms were seen in the stained smears. On the fourth day after admission spinal fluid showed a cell count of fifty-five with gram positive and negative organisms seen in the stained smear.

The temperature dropped steadily to normal limits on the second day after admission and remained normal during the patient's stay in the hospital.

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On the third day after admission the patient no longer complained of headache and Kernig's sign was no longer positive.

After six days in the hospital the patient was discharged in care of his family physician.

Case 2.—On October 7, 1937, a visit was made to the jail, from which the first patient had been admitted, to see two more of the inmates who had become ill.

J.— D.— L.—, a fifty-four-year-old white man, had twenty hours previously developed a slight head cold. A few hours thereafter he complained of increasing headache and some stiffness and soreness in his neck. When seen about noon on October 7, his axillary temperature was 104.6 degrees F. There was marked rigidity of his neck. The patient was comatose and looked very bad. Doubt was expressed as to the patient's ability to live until the next morning. Spinal fluid had a cell count of 500 cells per cu. mm. with positive globulin and sugar. Smears and cultures revealed the presence of gram negative intracellular organisms.

About 4:00 P. M. that day he was given seventy grains of sulfanilamide, dissolved in one pint of warm tap water, by means of a stomach tube. The stomach tube was used because the patient was so moribund that he could not be made to swallow. Thereafter he was given fifteen grains of sulfanilamide q.4.h. At 10:00 P. M. October 7, he was given 80,000 units of anti-meningococcus serum intravenously in 900 cc. of normal saline. At this time the axillary temperature was 104 degrees F.

At 3:00 A. M. October 8, the axillary temperature was 101 degrees F. The patient seemed much better, and asked intelligently for a cigarette on several occasions. At 7:00 A. M. October 8, the patient was sitting up in his bed asking for something to eat. He seemed clear and in possession of his faculties. At this time the temperature by mouth was 101 degrees F. and thereafter the temperature gradually dropped to normal limits by the following afternoon. The headache had disappeared and the neck was less stiff.

By October 11, the patient seemed to be well recovered clinically and the sulfanilamide was discontinued. Follow-up lumbar punctures were not done.

Case 3.—A twenty-seven-year-old white man, who was first seen on October 7, 1937, had two days before begun to complain of headache and dizziness. On the morning of October 6, he had complained of severe occipital headache, stiffness and soreness in his neck and some nausea. When seen on October 7, he complained of occipital and frontal headache, stiffness in his neck and back, loss of appetite, nausea and some photophobia. His temperature was 101.3 degrees F. (by mouth); pulse 94; respirations 19. He was lying on his left side, eyes away from the light, with his knees drawn up. Spinal fluid withdrawn at this time showed 0 cells per cu. mm., with no organisms in the stained smear. Globulin and sugar normal.

He was given forty grains of sulfanilamide as an initial dose and thereafter fifteen grains q.4.h. over a period of five days. During this period his clinical symptoms gradually cleared. The headache and stiffness in his neck decreased, so that after five days he no longer complained. A follow-up lumbar puncture was not done.

The jail in which the patients herein described were confined is a three-story brick structure. The first floor is the quarters of the jailer and his wife. The two floors above, containing four rooms, are prisoners' quarters. At the time the above patients were seen, there was a total of twenty-eight persons, besides the patients, crowded into these four upstairs rooms. These twenty-eight persons were given fifteen grains of sulfanilamide t.i.d. for six days beginning October 7, 1937. No other cases of meningitis developed.

The method of treatment used on these patients, and the use of sulfanilamide as a prophylactic measure was suggested by Dr. George B. Lawson, Chief of the Medical Service, Jefferson Hospital.

SUMMARY

1. Three patients with meningococcus meningitis were treated with large doses of sulfanilamide. One patient received in addition 80,000 units of anti-meningococcus serum intravenously. No attempt is made to contrast the relative merits of these two therapeutic agents.

2. As a prophylactic measure sulfanilamide was given to twenty-eight persons who were exposed almost continuously to these sick patients. In these people no cases of meningitis developed. From this one experiment conclusions are only suggested as to the value of sulfanilamide as a prophylactic agent in meningitis.

3. Sulfanilamide dissolved in water and given by mouth may be a means of attaining more rapid absorption of the drug.

4. An amazing recovery in an apparently hopeless case who received massive doses of sulfanilamide and 80,000 units of anti-meningococcus serum is described. It is felt that the remarkably quick recovery was due to sulfanilamide rather than the slower acting anti-meningococcus serum.

Jefferson Hospital.

BREECH PRESENTATION.

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I feel that what I learned from this case was actual and of value to me because it was my outside O. B. case which I referred to the hospital with the diagnosis of breech presentation. I was more or less handicapped, since the case was my first outside O. B. and I had never done a rectal examination before, and barely examined one or two abdomens in the O. B. Clinic in the Out-Patient Department. "Fortified," therefore, with a very meager obstetrical practice, and an ultra-conservatism which denied and eliminated too rash a regime, I was forced into this, my first introduction to the practice of obstetrics.

As I entered the darkened room, made somewhat brighter by the power relegated to kerosene, I at once perceived the unsuspecting patient lying in bed, bearing her pain with apparent nicety and calm despite the sombre fact that she was single. At 10:30 P. M. pains were occurring every one to two minutes and lasting thirty seconds. Observation in the vulval region disclosed what seemed to be an occasional extrusion of greenish black and brownish material. Her blood pressure was 145/85, and her disposition was noble, to say the least. The fetal heart sound was audible in the right lower quadrant; however, it impressed me as being weak in intensity, although its rhythm was regular and its rate 140 per minute.

A rectal examination was done, which, since it was the first undertaken by this writer, disclosed the fact that the patient did absolutely have a cervix, that it was soft and, what astounded me more, I felt that the cervix was dilated 1-2 cm. I did not feel anything hard which might have been interpreted as a head. The thought occurred to me that here was purely a negative case; there was nothing bony, but, since I heard the fetal heart low in the right lower quadrant, I could not fathom the disappearance of the head, and it was embarrassing not to account for its absence. However, Leopold, *via* his many maneuvers, gave me an idea that there was something hard in the fundus, on the right side chiefly. This man of Dresden also enabled me to palpate the smooth curved back to the right and anterior. His fourth maneuver was performed, but the unexpectancy of the presentation was not revealed except by a negative answer. Apparently everything was negative, but certainly the woman must be pregnant—of that I was certain.

While I was pondering the matter I watched the vulva, and again I noted this darkish material hastening through the vagina and soiling the linen. Another rectal and nothing was revealed. I began to harbor the thought that this, my first case, must be an oddity.

I listened again with my stethoscope, not one area but all over the abdomen. When I played the instrument near the right upper quadrant, lo and behold, the fetal heart sounds were strong and distinct. Another look at the hairless vulva, and the exuding material assumed the aspects of meconium. No head by rectal examination further added to criteria, made my case a breech, and immediate conversation with the intern on Outside O. B. suggested an ambulance.

My first case was transported to the hospital, and I saw it delivered the next day of a bouncing baby, *via* breech procedure. This was pleasure, indeed, since I noted that more mature opinion in one or two cases said that the case was ROA.

This case taught me that breech cases are comparatively infrequent (3.3 per cent), and that their labor is longer, more severe and exhausting than the vertex type. Flaccidity of the abdomen is said to favor breech presentation, but this case was a primipara with no laxity of abdomen. Further, the patient's pelvis was normal, and the head was not

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hydrocephalic, so it is chance alone which made this case what it was.

The prognosis for the child in breech presentation is worse, especially in primiparas. Premature rupture of the membranes occurs earlier in breeches and makes for a longer and harder labor since the breech or footling is an uneven dilating wedge. I learned that episiotomy in these patients assists nobly in maintaining the integrity of the perineum. I learned, too, that the delivery of the after-coming head (at least eight minutes after the umbilicus is seen) is usually delivered by the Mauriceau, or Prague, procedure. In difficult cases, Piper has designed forceps which make the way easier for the baby.

Abstracts

Simplified Analgesia in Urology.

Joseph F. Laibe, associate clinical professor of Urology at Loyola University School of Medicine, Chicago, in an article under the above caption says that the analgesic state should be deep enough to allow the surgeon to carry on the operation, but, when practical, less of the anesthetic or analgesic should be used to at least partly eliminate some of the operative risk. A dose of 1/32 to 1/20 grain Dilaudid plus 1/150 to 1/100 grain scopolamine given about one-half an hour before cystoscopy has been found to produce a satisfactory analgesic effect with adequate relief of pain within a shorter time than with morphine. In general, this combination holds these patients so well that other analgesics are not required. Patients weighing 120 pounds or less are given the smaller doses while the larger amounts are reserved for larger patients.

For major surgery, Dilaudid, 1/20 grain, and atropine, 1/150 to 1/100 grain are given about forty-five minutes before the operation, which is usually done under ethylene or nitrous oxide. In general, Laibe found Dilaudid a satisfactory opiate for pre- or post-operative use, as well as in such conditions as renal colic, bladder spasms, etc. In concluding his report he states:

"1. Adequate analgesia for cystoscopies is often obtained by using morphine, grain 1/6 to 1/4, or Dilaudid, grain 1/32 to 1/20, with scopolamine, grain 1/150 to 1/100, depending on the weight and irritability of the patient. If such a procedure is used the risk of depression is not as great as when inhalation or spinal anesthesia are used.

"2. Dilaudid has proved to be a more satisfactory opiate than morphine for the relief of pain in cystoscopies or other surgical cases, in renal colic, tumors, etc., since there is practically no nausea or other evidence of stimulation accompanying its use, and there is less necessity for post-operative catheterization."—*Ill. Med. Jour.*, March, 1938.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of March, shows the following cases compared with the same month in 1937.

	1938	*1937*
Typhoid and Paratyphoid	11	17
Diphtheria	62	60
Scarlet Fever	171	90
Measles	2,348	934
Meningitis	12	53
Poliomyelitis	5	3
Rocky Mountain Spotted Fever	0	1
Typhus Fever	0	0
Undulant Fever	0	2
Tularemia	3	1
Smallpox	0	1

WPA HEALTH PROJECTS IN VIRGINIA

WPA funds in the various projects supervised by the State Department of Health have been effective in increasing mass protection against disease. Through the medium of WPA, four thousand acres of surface of actual and potential mosquito-producing waters have been drained. Sixty-three miles of ditches were required to accomplish this work.

Stimulated by these activities, local communities realize as never before the value of this type of sanitary engineering. Thousands of dollars have been contributed by local communities for the respective projects. Moreover, positive assurances that funds will be forthcoming for maintenance have been received.

As is well known, Tidewater Virginia has been the victim not only of the malaria carrier but of the pest mosquito also. The vacation possibilities of that section, which equal those of other well-known American resort localities, failed to be realized fully because of this annoying insect. This situation for many years had been realized.

Sanitary engineering, under WPA, has accomplished what to many was considered to have been the impossible. For all practical purposes the pest

mosquito has been removed from that section. Not only has this activity added greatly to the Tidewater Section as a vacation and health-giving locality for vacationists, but it represents a very general service. Rich and poor, white and colored alike, have been freed from the attacks of the malaria mosquito and the pest mosquito.

Again, since the start of the WPA program on July 1, 1935, the Department has reviewed and approved plans and specifications for waterworks and sewerage improvements aggregating $4,008,715. Of this construction, 60 per cent already has been completed; the remainder is well under way. The protection against typhoid fever represented by these improvements is obvious.

For a number of years the Department has been active in community sanitation. The polluted spring or well, being so largely because of its faulty protection against polluting factors or improper location, has been responsible for a persistent, sporadic typhoid fever incidence. An additional impetus to this fundamental policy was realized when to the funds made possible through CWA and FERA the allotment through WPA became effective.

Since November, 1935, WPA community sanitation projcets have operated in ninety-three counties and three cities. Sanitary privies totaling 89,776 as well as thirty-two septic tanks have been built under these auspices. Incidentally, but significantly, since the WPA projects got under way, Virginia home owners have spent $1,172,080 for material involved in this work.

Affecting the health of the shellfish consuming public in the United States, as well as the economic security of Virginia's great shellfish industry, is the research now being conducted at the State Health Department's experimental plant for conditioning shellfish which was constructed at Willoughby in Norfolk through WPA funds. Experimental studies are being conducted to determine the feasibility of cleaning oysters taken from moderately contaminated areas by storage in tanks furnished with chlorinated water. Essential data on the operating costs of such conditioning also is being obtained.

The State Department of Health was given supervision of the WPA nursing program which was inaugurated in December, 1933. Nurses made tuberculosis surveys in counties lacking regular nursing services. Included in the survey was a visit to all homes in which there had been a death from tuberculosis since 1922; this, for the purpose of instructing the contacts in their personal care and encouraging them to have a thorough examination by their family physician. Demonstrations of nursing care and education in both personal hygiene and precautionary measures were given. The nurses also assisted the families and physicions in arranging for sanatorium treatment. The WPA nurses also have worked under the close direction of the health officer and nurses in the organized health services.

New Members

Doctors who have become members of the Medical Society of Virginia since the last list was published in the November 1937 issue of the MONTHLY are:

Dr. Thomas Beath, Richmond
Dr. William R. Berk, Clinchco
Dr. Carrington Leonard Booker, Lottsburg
Dr. Henry Reid Bourne, Danville
Dr. Earle Godfrey Brown, Arlington (now Mineola, N. Y.)
Dr. Norborne Page Cocke, Charlottesville
Dr. Joseph Edwin Cox, Waynesboro
Dr. Edward Arthur Delarue, Richmond
Dr. James Nicholas Dudley, Eastville
Dr. John Newton Dunn, Blackstone
Dr. Robert Richardson Eason, Buena Vista
Dr. Homer Earle Ferguson, Richmond
Dr. Hunter Bernard Frischkorn, Jr., Richmond
Dr. Cecil Curtis Hatfield, North Holston
Dr. Joseph Leigh Hundley, Wytheville
Dr. Zdenka Alda Hurianek, Staunton
Dr. Edward Valentine Jones, Jr., Arlington
Dr. Thomas Edward Jones, Charlottesville
Dr. John Phillip Lynch, Richmond
Dr. Richard Campbell Manson, Richmond
Dr. Carl Wise Meador, Richmond
Dr. John Moyer Meredith, Charlottesville
Dr. James W. Miller, Pembroke
Dr. Maxwell Herschel Mund, Martinsville
Dr. Richard Carroll Neale, Richmond
Dr. Charles Morris Nelson, Richmond
Dr. Bernard Lee Parrish, Norfolk
Dr. Allen William Pepple, Richmond
Dr. Benjamin Watkins Rawles, Jr., Richmond
Dr. George Audney Reynolds, Bowling Green
Dr. Ralph George Rohner, Richmond (now Princeton, Ind.)
Dr. John Richard Saunders, Madison Heights
Dr. Lacy Lee Shamburger, Richmond
Dr. Eldridge Cook Simmons, Roanoke
Dr. George Tucker Smith, Charlottesville
Dr. Arnold F. Strauss, Norfolk
Dr. James William Tankard, Pennington Gap (now Jenkins, Ky.)

XUM

Dr. Frederick Nimrod Thompson, Newport News
Dr. George Nathaniel Thrift, Richmond
Dr. William Derrick Tillson, Richmond
Dr. George Douglas Vermilya, Richmond
Dr. Meyer Richard Whitehill, Norfolk
Dr. William Hoge Wood, Jr., Charlottesville

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.
President-Elect—MRS. HAWES CAMPBELL, Venter.
Corresponding Secretary—MRS. LAWRENCE O. SNEAD, 5307 New Kent Road, Richmond.
Recording Secretary—MRS. JAMES K. HALL, 3011 Seminary Avenue, Richmond.
Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.
Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

National Convention in San Francisco.

The Woman's Auxiliary to the American Medical Association with hold its Annual Meeting in San Francisco June 12 to 17. Those of us who have ever had the privilege of attending a National Convention know what a treat is in store for us. Those who have not had this opportunity, now have the anticipation of a glorious adventure. The prospect of a National Convention and a trip to San Francisco at the same time promises a joy beyond the flights of the imagination. The American Express Travel Tour has planned Physicians' De Luxe Special Trains which will enable the visitors to see the Indian Detour, Grand Canyon, Los Angeles, Riverside and Santa Catalina Island on the trip out. There are two alternate return routes: one via Portland, Seattle, Victoria, Vancouver, Canadian Rockies, Lake Louise and Banff Springs; the other by way of the Yellowstone, Salt Lake City, Royal Gorge, Colorado and Denver. Don't let your husband leave you at home this time. Why not make this trip serve as your summer vacation? You could not plan a more fascinating or delightful one. Plan to attend the meeting with your husband, "see America" together and help make the delegation from the State of Virginia the largest ever to attend a National Convention!

Reports from Auxiliaries.

NORFOLK

The Woman's Auxiliary to the Norfolk County Medical Society, at a meeting March 14, made plans for a card party, dinner and dance to be held at the Norfolk Yacht and Country Club on the afternoon and evening of April 19. The general plan, as discussed at this meeting, is for bridge and tea in the afternoon, the dinner and dance, with a floor show as a special feature, to take place at night. The proceeds realized will be used for the Auxiliary's charity work, one activity part of which is the maintenance of a patient at the Victory Memorial Hospital for the tubercular.

The members paid a tribute, in the form of a moment of silence, to Dr. H. R. Drewry and Dr. William Evans, whose deaths recently occurred.

It was decided to plant a tree as a living memorial to doctors in observance of Doctor's Day.

Mrs. C. J. Devine, president, presided.

(MRS. W. E.) RUBY D. BUTLER,
Chairman, Press and Publicity.

RICHMOND

The Woman's Auxiliary to the Richmond Academy of Medicine met in semi-annual meeting at the Academy Building, Friday, April 8. Mrs. E. Latane Flanagan, president, presided.

On recommendation of the Executive Committee, it was decided to maintain a speakers' bureau this year and a letter will be sent to various women's groups in the city offering speakers for health subjects or programs.

The Executive Committee also recommended that the Auxiliary have a joint program meeting with the Academy of Medicine and this was passed. Details for the program were left in the hands of the program chairman of the two organizations.

Members of the Auxiliary helped in the Tuberculosis Early Diagnosis clinic held in Richmond the week of April 3 to 9.

The Auxiliary was selected as one of the organizations to help in the Control of Cancer drive this month and the members were glad to accept their responsibility in the Woman's Field Army undertaking this work.

The Auxiliary decided to contribute $5.00 to the Jane Todd Crawford Memorial Fund.

A card party is being planned to be held May 6, proceeds from which will be used for the maintenance of the Auxiliary's local charities, the principal

one being the maintenance of three cots in the Crippled Children's Hospital.

(MRS. F. J.) REBECCA C. WAMPLER,
Chairman, Press and Publicity.

DANVILLE-PITTSYLVANIA

It is with a sense of pride and gratification that the Woman's Auxiliary to the Medical Society of Virginia welcomes the newly organized Auxiliary to the Danville-Pittsylvania County Medical Society. An organized group of physician's wives in this locality brings into reality what has long been the hope of the State Medical Auxiliary. We feel that this group will prove to be an asset not only to its own Medical Society but to the medical profession in the entire State. The Auxiliary was organized March 30, with the following officers: president, Mrs. W. E. Dickerson; vice-president, Mrs. Roy W. Upchurch; secretary, Mrs. Snowden C. Hall; treasurer, Mrs. M. H. Watson.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Eli Lilly & Co.

Sulfanilamide Tablets, 7½ grains.

Parke, Davis & Co.

Tablets Sulfanilamide, 7½ grains.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Mixed Grasses Concentrated Pollen Antigen—Lederle (June Grass, Orchard Grass, Sweet Vernal Grass, Red Top and Timothy, in equal parts).—This product is also marketed in five syringe packages (series D), each syringe containing 3,000 pollen units; and in five syringe packages (series E), each syringe containing 6,000 pollen units. Lederle Laboratories, Inc., Pearl River, N. Y.

Mixed Grasses Pollen Antigen—Lederle (June Grass, Orchard Grass, Sweet Vernal Grass, Red Top and Timothy in equal parts).—This product is also marketed in five syringe packages (series D), each syringe containing 3,000 pollen units; and in five syringe packages (series E), each syringe containing 6,000 pollen units. Lederle Laboratories, Inc., Pearl River, N. Y.

Metrazol Sterile Aqueous Solution, 10 per cent.—A sterile aqueous solution containing metrazol (New and Nonofficial Remedies, 1937, p. 301) 0.1 Gm. per cubic centimeter, for parenteral injection. Bilhuber-Knoll Corporation, Jersey City, N. J.

Ampule Sterile Solution Procaine Hydrochloride—Squibb 10 per cent, 2 cc.—Each cubic centimeter contains procaine hydrochloride—U.S.P. (New and Nonofficial Remedies, 1937, p. 70) 0.1 Gm. in sterile distilled water. E. R. Squibb & Sons, New York. (*J. A. M. A.*, March 12, 1938, p. 815.)

Propaganda for Reform

Mineral Oil in Foods.—The Council on Foods reports that it is well known that liquid petrolatum is not absorbed from the gastro-intestinal tract, and that it yields no calories. Because of these properties, mineral oil is extensively used in the treatment of constipation and, to a lesser extent, in replacing fat in certain foods, chiefly mayonnaise and salad dressings, and a few other products. According to published reports mineral oil interferes with the utilization of vitamin A by experimental animals. Later reports indicated that the ingestion of mineral oil resulted in a considerable loss of vitamin A to the animal organism if the oil was administered with the source of vitamin A but not if the mineral oil were given at some other time of the day. It was also brought out that different results could be expected with different sources of vitamin A. It is apparent that liquid petrolatum would be a poor vehicle for vitamin A and particularly for provitamin A, and its use in this connection could not be countenanced. On the other hand, it appears that in the amounts usually prescribed and under the conditions which should be observed (not to be taken at mealtime), the effect of liquid petrolatum on the absorption of vitamin A of the human diet probably is of little consequence. When incorporated in foods, however, so that the mineral oil is taken at mealtime, it is obvious that there is danger of interference with the absorption of the fat soluble vitamins. The Council on Foods therefore advises strongly against any indiscriminate dosage of mineral oil either alone or incorporated in special foods. (J. A. M. A., Nov. 27, 1937, p. 1814).

Nupercainal—"Ciba" Not Acceptable for N.N.R.—The Council on Pharmacy and Chemistry reports that Nupercaine—Ciba (the hydrochloride) has for some time stood accepted by the Council as a local anesthetic. At the request of the distributor, the Council in 1931 took up consideration of the base, which at that time was marketed in the form of Nupercaine Ointment 1 per cent. On account of the danger from the use of powerful anesthetics by the public the Council objected to the unsupervised use of Nupercaine for sunburn and burns. Subsequently, the firm changed the name of the product to "Nupercainal—Ciba" and circularized the medical profession widely. It was found that the objectionable claims were still maintained. The name does not make clear that the active ingredient is Nupercaine, and further it creates the impression that the preparation is some chemical derivative of Nupercaine instead of being a simple mixture. The firm agreed to abandon the objectionable claims and to revise satisfactorily the trade package. It refused, however, to meet the Council's objection to the name. The Council was therefore compelled to declare the product

unacceptable for N.N.R. (*J. A. M. A.*, February 5, 1938, p. 441.)

Dangers of Sodium Perborate in the Mouth.—The most prominent ingredient used in recent years in dentifrices and mouthwashes for antiseptic purposes is sodium perborate. This has been inspired, no doubt, by its alleged efficiency in combating Vincent's infection. According to the clinical observations recorded in a recent questionnaire study by Isador Hirschfeld, chairman of the Committee on Scientific Investigation of the American Dental Association, perborate may cause (1) painful chemical burns of the oral mucosa (including the gingivae); (2) less painful or entirely painless burns producing a milky-white discoloration, especially of the marginal gingivae; (3) an inflamed condition of the oral mucosa, which predisposes the gingivae and mouth generally to ready abrasion and infection through minimal traumatization, and (4) a form of "hairy tongue" which in some instances causes gagging or irritation of the soft palate and pharynx. Ample examples of the danger of this form of self-medication have now been recorded and adequate proof offered. (*J. A. M. A.*, February 5, 1938, p. 445.)

The Vitamin C Content of Commercially Canned Tomato Juice and Other Fruit Juices as Determined by Chemical Titration.—The Council on Foods reports that many physicians have inquired about the vitamin C content of canned fruit juices. In order to obtain further information on this point, Dr. E. M. Bailey of the Connecticut Agricultural Experimental Station, New Haven, has supplied comparative data on the cevitamic acid content of Council accepted products by chemical titration. This survey covers all canned fruit juices which, at the time of the examination, were privileged to display the seal of the Council on Foods. The figures show that all brands of the canned fruit juices examined contained appreciable quantities of vitamin C. From the figures available, it would appear that canned orange juice is only slightly less potent in vitamin C than the fresh juice from which it is made. Approximately two and one-half volumes of canned tomato juice should be given in order to provide the vitamin C equivalent of one volume of fresh orange juice. If other juices are to be substituted, it is probable that the substitution could be made, other things being equal, on the basis of the vitamin C content. (*J. A. M. A.*, February 26, 1938, p. 650.)

Book Announcements

Library Books Available to Readers.

The following books are among the recent acquisitions of the Library of the Medical College of Virginia, and are available to our readers, the only cost being return postage:

Krusen, F. H.—Physical therapy in arthritis.
Kurtz, C. M.—Orthodiascopy.
Lapage, G.—Nematodes parasitic in animals.
Mann, I.—Developmental abnormalities of the eye.
Markowitz, J.—Textbook of experimental surgery.
Marten, M. E.—The doctor looks at murder.
Means, J. H.—The thyroid and its diseases.
Merritt & Fremont-Smith—The cerebrospinal fluid.
Needham & Green—Perspectives in biochemistry.
N. Y. Academy of Medicine—Milestones in medicine.
Osgood & Ashworth—Atlas of haematology.
Page, I. H.—Chemistry of the brain.
Palmer, J. H.—The development of cardiac enlargement in disease of the heart. A radiological study. Med. Res. Council Spec. Rep. Ser. No. 222.
Physicians of the Mayo Clinic and the Mayo Foundation.
Potter, P. S.—Pediatric treatment.
Rhine, J. B.—New frontiers of the mind.
Stephens, J. W. W.—Blackwater fever.
Todd, M. E.—The thinking body.
Tuft, L.—Clinical allergy.
White, W.—The psychology of dealing with people.

Alcohol. One Man's Meat. By EDWARD A. STRECKER, A.M., M.D., Sc.D., Professor of Psychiatry, School of Medicine, and Graduate School of Medicine University of Pennsylvania; Psychiatrist to the Pennsylvania Hospital and Consultant and Chief of Service, Institute of the Pennsylvania Hospital; etc. And FRANCIS T. CHAMBERS, JR., Associate in Therapy, Institute of the Pennsylvania Hospital. The Macmillan Company. New York. 1938. Octavo of xvi-230 pages. Cloth. Price $2.50.

Alcoholism is an age-old problem—a problem that has never been and probably never will be entirely solved. It seems a pity that a substance, a drug if you wish, that can give so much pleasure and gaiety to the world is also, barring war, the world's greatest curse. To date, efforts to conquer the baneful effects of alcohol have been dismal failures; the so-called temperance effort with its propaganda, its lurid pictures, and its evangelistic appeals has made but little impression; prohibition seems not only to have increased liquor drinking but to have stimulated racketeering and other disrespect for law; and governmental alcohol control by state boards has placed a powerful and dangerous weapon in the hands of politicians and has made it necessary to buy a pint to get a drink. The Virginia General Assembly has just defeated the proposition to place before the high school students of the state a book, written at its own request, by Drs. Waddill and Haag, two scientific teachers, one from each of the state medical schools, for the proper education of youth in the knowledge of the use and abuse of alcohol. Summing the situation up, Puck, speaking through the magic of Shakespeare's pen, certainly made a wise observation when he said, "What fools these mortals be."

XUM

Dr. Strecker, professor of psychiatry of the school of medicine of the University of Pennsylvania, and holder of many other honors, and Mr. Chambers, associate in therapy of the institute of the Pennsylvania Hospital, have bent their minds to the production of a book on alcohol which brings to the attention of the profession and to the interested public a sane, helpful, and scientific view of the cause, effect, and therapy of the abuse of alcohol. Not only this, but the book is exceedingly well written, interesting, and broad minded.

"Alcohol, One Man's Meat," with McDougall's work in 1926, Richard Peabody's "The Common Sense of Drinking," published in 1936, and the *"British Journal of Inebriety,"* for the last several years, attack the problem of alcoholism in the light of modern knowledge from almost every angle and should be productive of better understanding and of more constructive therapeutic results.

"Alcohol, One Man's Meat" rolls out upon the printed page the feelings, thoughts, and actions of the alcoholic in such a manner that his whole personality is revealed to our eyes. We learn that there are three general types of alcoholics, the maniac, the inferior, and the childhood dominant and that the physician must never create a defeatist attitude in the patient although the true alcoholic can never learn to drink in a controlled manner. The alcoholic's immature emotional level is to be elevated to better emotional maturity. We learn that legal commitment may at times be necessary, but that it is not a solution or even a desirable measure in the majority of instances. We find that we must avoid, and induce the family to avoid, grim warnings and the pointing out to the patient the debasing, moral aspects of his condition and that the non-emotional approach is far better than the emotional approach. The patient must be taught to play the game of life on a mature basis. The best way to accomplish this is to get the patient accessible by a stay of some weeks or months in a hospital in order to establish free association between the patient and the therapist and also to have the patient follow a daily schedule of living both in the hospital and after he leaves, in which alcohol plays no part and when he leaves to get him to come to the therapist for frequent analysis and advice for a period of at least a year. To attain permanent results the family must be instructed in gaining an attitude of understanding cooperation, and the patient must have a genuine desire to get well. The main thing for the doctor, the patient, and the family to realize is that alcohol is not the difficulty *per se*, but that it is the outward and visible sign of an inward neurosis or psychoneurosis.

The modern treatment of acute alcoholism or that form with residual wet-brain must, of course, not be neglected. In this reviewer's hands glucose, lumbar puncture drainage, hydrotherapy, and insulin have proved of great value. The proper physical and laboratory examinations, as the book recommends, must be made and abnormal and disease factors treated and, as far as possible, eliminated.

In cases of alcoholism selected for psychologic and psychiatric treatment by the authors, most satisfactory results have been obtained, but the book is not limited to the consideration of these cases. In fact, the great virtue of this book, which has great virtue, is that anyone reading it will take away with him a better, a clearer, and a more useful idea of the alcohol problem in all of its aspects. This book is a good book to purchase, to ponder, and to profit by.

BEVERLEY R. TUCKER, M. D.

MacLeod's Physiology in Modern Medicine. Edited by PHILIP BARD, Professor of Physiology, Johns Hopkins University School of Medicine. With the collaboration of Henry C. Bazett, Professor of Physiology, University of Pennsylvania; George R. Cowgill, Associate Professor of Physiological Chemistry, Yale University School of Medicine; Harry Eagle, Passed Assistant Surgeon, United States Public Health Service and Lecturer in Medicine, Johns Hopkins University School of Medicine; Chalmers L. Gemmill, Associate in Physiology, Johns Hopkins University School of Medicine; Magnus I. Gregersen, Professor of Physiology, College of Physicians and Surgeons, Columbia University; Roy G. Hoskins, Director of Research, Memorial Foundation for Neuro-endocrine Research; J. M. D. Olmsted, Professor of Physiology, University of California; and Carl F. Schmidt, Professor of Pharmacology, University of Pennsylvania. Eighth Edition. St. Louis. The C. V. Mosby Company, 1938. Octavo of xxxv-1051 pages. Cloth. Price, $8.50.

This is the first edition since MacLeod's death and has been thoroughly rewritten by many outstanding collaborators under the editorship of Doctor Bard. It is now a well-written and modern text, but, unfortunately, as in previous editions, the section on the labyrinth is entirely inadequate. Such disregard of an organ as this naturally makes the reviewer wonder whether or not other equally important matters have been neglected.

R. J. M.

XUM

Virginia Medical Monthly

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Editorial

It's Not What You Say, But How You Say It.

The question at the moment is not whether those who guide the American Medical Association as paid officers, or as those who go to its conventions as delegates, or as those who serve on its important committees as members, reflect the sentiment and will of the great body of the American medical profession. The fact remains that whatever their guidance and whatever their opinions, to the world at large the American Medical Association is a great and respected organization which represents the medical profession of the United States. The question at the moment is not whether we agree with what President Means of the American College of Physicians said the other day in New York. The American Medical Association is still the all inclusive medical force in this country. In the minds of the people it speaks for the American doctor.

It is therefore our duty to see that that voice is representative of the best of our profession, and that when it speaks it speaks clearly, honestly and without fear. The way to see that this is done is to send properly instructed delegates to its annual conventions, delegates who are chosen for some other reason than because they were sent last year, delegates who do not give vent to prejudices and narrow points of view, but delegates who really represent the best thought of the doctors who elected them. No good can ever come from high brows throwing spit balls at the A. M. A. officialdom. No good can ever come from self constituted groups deluging the lay press with creeds of new professional righteousness. With less politics and polemics a properly constituted House of Delegates can do much.

The Impasse in Fauquier.

The Fauquier Hospital, officially called the Fauquier County Hospital Association, under the management of a lay board, has until now left the professional conduct of the institution entirely in the hands of the attending physicians, and we gather that all of the physicians in good standing in the community have practiced medicine and surgery in the hospital on a parity.

A recent revision of the by-laws under which the hospital operates has changed things. In the words of the doctors these new regulations "restrict them in their practice in the hospital and deprive the people of this county of their right to have free choice of physicians while in the hospital." The doctors further charge that "the lay board is attempting to administer the professional government of the hospital, a subject on which they cannot be well informed."

Twenty-eight doctors, practically all the patrons of the hospital, have refused to serve under the new regulations and a shut down of the hospital threatens. It is hardly likely that a matter of such vital community interest can long remain unsettled.

We are not in possession of all the facts in con-

nection with this matter, and cannot pass judgment upon it as a whole, but there is one important phase of it which we feel called to comment upon. The dispute between the professional staff and the lay board of the hospital seems to us to represent just another example of the danger to medicine that is inherent in the increasing interest of the layman in the whole field of medicine.

With subtle but determined insistence the laymanization of the profession goes on. Within recent years thousands of social workers have sprung into being. Every one of them constitutes a bridge over which outside influence is streaming into the vital centers of an unsuspecting profession, and the delivery into the hands of laymen of many of the strategic positions in medical education and organization represents a danger few of us have been alive to so far. It is bad enough to face a frontal attack such as threatens from the avowed plans and purposes of the New Deal, but to be blind to the lurking danger within the very citadel itself is still worse.

Physicians must be sure in every case that they are not resisting change *per se;* that they are conversant with, and pledged to the latest improvement in whatever field of their endeavor that is at the moment under fire; that they are furnishing leadership without reproach, and that they have the public interest, not their own, at heart—though the two will always prove one in the last analysis. Then they must adamantly resist all lay encroachment.

Examinations.

Examinations—the bugbear of pupil and teacher alike. Who hasn't wished they could be abolished? As thousands of students all over the country face up to them again this month, one is reminded of the fact that no adequate substitute has yet been found for them and that they still represent the only practical measure of scholastic achievement.

Recognizing this, Professor Robert P. Dobie of The University of Buffalo School of Medicine in an excellent article in the *Journal of the Association of American Medical Colleges* for March, after reviewing the types of examination in vogue, pointing out their defects and showing the need for improvement, contrasts the traditional essay type of examination with the newer objective type. His studies, based on questionnaires and on his own experience as a teacher of medicine, bring out a number of facts worth the consideration of all who teach medicine and of all who are interested in educational problems.

In a survey made by Dr. Dobie of seventy medical schools it was disclosed that only 8 per cent used oral examinations exclusively and that in the vast majority of the others the usual essay type of question was employed. For example: if an examiner were to ask a medical student to give in detail the symptoms, diagnosis and treatment of typhoid fever, he would be employing the essay type of question. Dr. Dobie contends that, among those who are supposed to know, this type is now regarded as inadequate, invalid and unreliable. In support of such strong assertions he quotes the work of Starch at the University of Wisconsin and of Sandiford at the University of Toronto. These investigators found that where sincere attempts were made by eight examiners to grade 128 essay-question-manuscripts, there was no such thing as uniformity in their appraisal. "The point spread between the highest grade assigned each manuscript was more than ten points in more than 60 per cent of instances and more than fifteen points in 34 to 53 per cent of instances." Examiners grading the same lot of manuscripts after several months' lapse of time also showed tremendous variations from their former grades.

Dr. Dobie gives the following example of the newer objective questions: "You are examining the abdomen of a patient who has had acute severe abdominal pain of four hours' duration. You believe there is obliteration of liver dullness on percussion. 1. Of what significance is such an observation? 2. How can such obliteration be established visually? 3. If definitely established, is such a patient more apt to be a male or a female? Why?"

The answers required of this question are short, demanding "a maximum of thinking and a minimum amount of writing." They can be graded quickly, easily, and reliably. Such questions have been shown to be well adapted to the medical curriculum, to test knowledge based on facts, and to demand in their answers interpretation, correlation and judgment.

It is believed that in the case of medical students the lack of correlation between the results of the present aptitude tests and the results of the old essay type of examination is in itself a condemnation of the latter, and that the use of the newer objective

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type of examination will give results highly predictable in the results of the aptitude tests.

Something Ought to be Done About it.

Something ought to be done about it,—about this growing, vicious, expensive custom of showing slides at medical meetings. Time was when no one thought of slides. One read one's paper and went home. But then it became fashionable, especially if one could afford it, to show a few slides at the end of one's paper. Now the style of hats has changed even more radically. Everybody must show slides, and the helpless audience is overpowered with a deluge of screen presentations which flicker on and off through the whole meeting.

In these days a paper without slides seems to be considered dull as ditch water—there is no action in the drama—and the success of a presentation, in the author's mind at least, seems to be proportional not only to the number of his slides but to the rapidity with which they can be shown without retarding his flow of language.

This is the worst of all, this habit, which is getting to be quite the rage, of having slide after slide flashed on the screen while the essayist goes merrily on reading a paper timed to the split second to get under the tape before the allotted time is up. How any audience could listen to a paper with its ears, look at a rapid succession of screen flashes with its eyes and register anything but confusion on its brain is passing comprehension.

Of course some slides are useful. Many are abominable. They are illegible because their lettering is too small, because they are congested with too many facts and figures or because they are confused with decimals, fractions, asterisks, etc.

It takes a special intelligence to prepare a slide and a special intelligence to present one. A slide should be so clear that no explanation is necessary, and the speaker should be so anxious to establish its clarity that he will take time to explain it even if it be a simple one. If it is worth his using, it is worth his time in explanation.

Something ought to be done about this slide business if only to save from madness the chronic attenders of medical meetings who still labor under the delusion that such a gathering is a place to learn and who therefore insist on staying through even the longest scientific session.

Report of the Rockefeller Foundation.

When John D. Rockefeller died about a year ago his total philanthropies had amounted to about $530,000,000, administered largely by certain well-known foundations. Due to Mr. Rockefeller's conviction that it was unwise to maintain funds in trust in perpetuity, the charters of at least two of these foundations authorized in due time the expenditure of principal as well as interest. For this reason the day is fast approaching when the Rockefeller Foundation will no longer exist.

Approximately $10,000,000 has been expended by this Foundation in the past year. More than half of it has gone to the medical sciences and public health. President Raymond B. Fosdick in a review of the activities of the Foundation for 1937 relates an amazing service to medicine that every doctor should realize.

Pointing out the fact that the Foundation's objective is "the well-being of mankind *throughout the world,*" Dr. Fosdick shows that its activities have been projected upon an international plane "without consideration of flags or political doctrines or creeds or sects." For, says he, "in the last analysis knowledge cannot be nationalized. No successful embargoes can be maintained against the export or import of ideas." It makes no difference whether the cure of cancer comes from Berlin or New Haven, we are equally "the beneficiaries of the intellectual property of the race." Animated by this principle the public health work of the Foundation has been spread over seventy-seven different countries and has taken in general three lines of activity: 1. Aid to central and local health departments; 2. Public health education; and 3. The study and control of specific diseases.

Perhaps the most interesting developments have been along the lines reported last year and involve further confirmation of the importance of jungle yellow fever as an entity. This disease has badly upset the epidemiological strategy which has hitherto successfully dealt with yellow fever, for it occurs independently of the *Aedes aegypti,* a vast reservoir of infection existing in the hinterland of both South America and Africa with as yet unknown vectors. Besides establishing the fact of jungle yellow fever the Foundation has developed as the only hope of prevention a method of individual immunization by vaccination with attenuated virus. During 1937 well over 40,000 persons in South America were pro-

tected from the disease by this vaccine. It offers a weapon of defense against what has come to be recognized as an international peril—the spread of yellow fever by air traffic, since immunization of air crews and passengers is now entirely practicable.

In medicine the activities of the Foundation have been largely directed toward the advance of the knowledge of psychiatry. Says Dr. Fosdick, "it cannot yet be said . . . that the development of psychiatry has paralleled the development of other branches of medicine, or that psychiatry has been adopted by the medical profession on the same terms as, for example, surgery." Pointing out that psychiatry is a new science with a paucity of trained personnel, with a leaning to strange cults and theories, powerless to employ "scientific techniques so fruitful in the study of the heart and bacterial invasions," he declares that it has been "shoved off in a corner of speculation and terminologies." The object of the Foundation in expending last year more than one and a quarter million dollars on this specialty was to lift it from a position of inferiority and to make it "a headland of medicine and not an island of speculation."

The influence of the Foundation has been powerfully exerted on experimental biology in the belief that although man is fast mastering his environment he really knows very little about himself. "The biological sciences" which Dr. Fosdick says "are broadly speaking one hundred years behind chemistry and physics," have for this reason received major support from the Foundation.

Alarmed over the disappointingly slow development in the United States in the field of organic chemistry, a field in which England and other European countries have taken the leadership which was once Germany's, the trustees of the Foundation are now giving substantial assistance to stimulate fruitful experimentation.

The Foundation has of course other interests. For example, it has for years supported an anthropological and paleontological program at the Choukoutein Cave in China where the Peking Man, probably the oldest remains of a human being, was recently found. Its concern for the social sciences and the humanities has been displayed in the expenditure of thousands of dollars for grants and scholarships and teaching programs. Its extensive plans for rural education in China, brought to naught for the time at least, is but a further, albeit unnecessary, example of the advances of peace being delayed by war.

The studied expenditure of his money by officers and trustees chosen for breadth of vision and sound point of view has characterized Mr. Rockefeller's policy at all times. It is an encouragement to those who believe in the practical workings of democracy; and the use of a large proportion of his millions for medicine is proof not only of the wisdom of his agents but of the fundamental nature of the calling in which all physicians are engaged.

An Echo From An Old Crisis.

Students of American medical history are familiar with the attitude and action of the young men of Southern origin who were studying medicine in Philadelphia when the Civil War began. Almost to a man they quit and a few days later a trainload of future medical officers under the leadership of Hunter McGuire disembarked in Richmond. It was a dramatic moment in the Confederate capital.

There were Southern students of medicine in other cities besides Philadelphia. There were a number in New York. How these young men reacted to the agitation that was sweeping the country in 1860 is recorded in a clipping from a New York paper of June 30 of that year which has just come into our hands:

"MEDICAL SECESSIONISTS.

"Meeting of the Southern Students of the Thirteenth Street Medical College—Anti-Secession Resolution Adopted.

"The Southern students of the 13th street medical college met in the lecture room of the college, yesterday noon, to determine upon what action they would take in view of the present secession excitement. Thirty-two students were present, and three or four members of the college faculty.

"Mr. James H. Purdy, of Virginia, was called to the chair, and a committee of three appointed to draw up resolutions, of which Mr. Calhoun Hill, of North Carolina, was made the chairman.

"Professor Raphael, who is a native of Virginia, was then called upon to address the meeting. He did not consider that the election of Lincoln was a sufficient cause for the students to relinquish the superior advantages afforded by New York to medical students. Politics and a medical education should be kept distinct from each other. He thought the present aspect of affairs in the South was not

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legitimately the immediate result of any political influence, but a turbulent state which a lot of alarmists had been plotting and planning for a long period, in order to profit by it in some way or other.

"The committee then came in and offered the following resolutions:

WHEREAS: At a recent meeting in this city, of Southern medical students, efforts have been made to induce them forthwith to abandon the college, and return to their homes, for political reasons, in view of the recent presidential election and its possible results; therefore,

RESOLVED: That the class in attendance at the New York Medical College and Charity Hospital, including a number of Southern men who are sojourning in New York in the pursuit of medical education, and for which purpose they have left their homes and entered upon the lectures now in progress here, can see no reason for such rash and abrupt measures as those recommended, until the respective States of the South to which we belong, shall determine upon their course of action; or until we shall receive instruction from home that it is expedient to return.

RESOLVED: That as several of our professors are Southern men by birth, and education, and none of them sympathize with sectional politics either North or South, and that as no prejudice against the South is entertained by any of our professors or fellow students, we have no just pretext for forfeiting the clinical and other advantages we are enjoying here in cultivating our profession.

RESOLVED: That we remain at our posts, and counsel our Southern brethren in other Northern schools to do so, until duty to our respective states shall summon us away from our studies at the call of patriotism, when we pledge ourselves to obey, as loyal citizens of the Southern States.

"Professor Reese, a native of Maryland, urged the adoption of the resolutions, and expressed the hope that they would recognize no political distinctions until there was something growing out of them that would affect their devotion to science; then there would be a just pretext for throwing up their studies.

"After spirited remarks by Professors Gardiner and Budd, both of New York, the resolutions were put and carried unanimously. Messrs. Hill and McElwer also spoke in favor of remaining here until the states from which they hailed (North Carolina and Missouri, respectively) actually seceded.

"The meeting then adjourned."

Proceedings of Societies

The Elizabeth City County Medical Society

And the Dixie Hospital Staff are conducting several clinics at the Dixie Hospital: Orthopedic or Crippled Children's Clinic, sponsored by the Hampton Kiwanis Club, and the Prenatal and Maternal Welfare (Birth Control) Clinic, and Syphilis Clinic. The latter clinic has been in operation since December, 1936, and is held once a week with an average attendance of about thirty.

Dr. Willard P. Smith, Hampton, is president of this Society and Dr. Robert H. Wright, Jr., Phoebus, secretary.

The Patrick-Henry Medical Society,

At its annual meeting elected the following officers who are serving for 1938: President, Dr. D. L. Fleshman, Bassett; vice-president, Dr. J. T. Shelburne, Critz; and secretary-treasurer, Dr. F. B. Teague, Martinsville. Meetings are held quarterly.

Williamsburg-James City County Medical Society.

At a recent meeting of the James City-New Kent Medical Society, a motion was made and seconded that the name of the Society be changed to the Williamsburg-James City County Medical Society, and that a new charter be granted under this name. At this meeting, the officers elected were: President, Dr. E. B. Kilby of Toana; vice-president, Dr. J. R. Tucker of Williamsburg; and secretary-treasurer, Dr. I. S. Zfass of Williamsburg.

It was decided that the April meeting was to be at Williamsburg Inn Annex on the seventh of that month and was to be "Ladies' night".

I. S. ZFASS,
Secretary-Treasurer.

The Nansemond County Medical Society,

At its meeting in Suffolk on March 25th, re-elected Dr. E. C. Joyner and Dr. C. C. Hedges, both of Suffolk, as president and secretary-treasurer, respectively, for the coming year. On this occasion, Dr. Oscar Swineford, assistant professor of medicine at the University of Virginia School of Medicine, was the guest speaker, his subject being "Fibrositis and Arthritis".

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The Orange County Medical Society

Held its regular quarterly meeting on April 1, with Dr. Lewis Holladay, Orange, in charge of the program. Following his paper on some of his early experiences as a rural physician, refreshments were served by Mrs. Holladay.

The next meeting will be held on July 1, with Dr. O. N. Shelton as leader.

The Northampton County Medical Society

Had its regular quarterly meeting on April 6, at which time the members took part in a round-table discussion under the guidance of suggestions from Dr. John R. Hamilton of Nassawadox, on the subject of "Congestive Heart Failure".

This society and the Accomack County Medical Society are making definite plans for a series of lectures in Internal Medicine to be held on "the Shore" in the near future.

W. C. HENDERSON,
Secretary.

The Fourth District Medical Society

Held its regular meeting on April 19, in Victoria, under the presidency of Dr. J. L. Hamner, Mannboro, following which the members were entertained at dinner at the home of Dr. H. E. Whaley.

The following program was presented: Lumbo-Sacral Defects as a Cause of Low Back and Vague Abdominal Pain by Dr. Allen Barker, Petersburg; The Cure of Direct Inguinal Hernia by Dr. Charles R. Robins, Richmond; A New Method of Treating Salpingitis by Dr. Philip Jacobson, Petersburg; The Use of Cod Liver Oil (locally) in the Treatment of an Infected Burn by Dr. H. B. Showalter, Kenbridge; The Use of Vegetable Milks in Infant Feeding by Dr. W. Ambrose McGee, Richmond; Experiences and Impressions in the Use of Some of the Newer Modalities in Medical Practice by Dr. H. E. Whaley, Victoria; and Cataract Due to Dinitrocresol by Dr. C. S. Dodd, Petersburg.

Lynchburg Academy of Medicine.

The regular meeting of the Academy was held in the Elks' Club, April 4, with the President, Dr. Elisha Barksdale, presiding.

Dr. John Walker, through his long distinguished and faithful service, was unanimously voted to Honorary Membership in the Academy.

Drs. Edwin Harper and E. S. Groseclose presented instructive papers on Infant Mortality from a Pediatric and from a Maternal Standpoint, respectively.

C. E. KEEFER, M. D.,
Sec'y-Treas.

Roanoke Academy of Medicine.

At the regular meeting of the Academy on April 4th, the following scientific program was presented: Infection, Immunity and Specific Treatment of Lobar Pneumonia by Dr. John A. Kolmer; and Diverticulum of the Hypopharynx by Dr. Chevalier Jackson. Both speakers are from Temple University, Philadelphia.

The Virginia Peninsula Academy of Medicine

Held its monthly meeting on April 18th, at the Chamberlin Golf Club in Hampton. Dr. Julian M. Ruffin, of Duke University, spoke on the Diagnosis and Treatment of Conditions Resulting in Blood Diarrhea, which was illustrated with slides in color and charts. The meeting was followed by a chicken dinner.

An association to provide hospitalization for residents of the Peninsula has recently completed its organization with all the civilian hospitals participating. Much credit is due Dr. Harold W. Potter, of Newport News, for his efforts in behalf of this organization.

News Notes

Danville Meeting of Medical Society of Virginia.

Danville doctors are active in their preparations for the sixty-ninth annual session of the Society to meet in their city on October 4, 5 and 6. Scientific and commercial exhibits are to be a feature of the meeting as usual, and some spaces have already been engaged. Individual members or groups who desire to have scientific exhibits are asked to communicate with the state or local chairman of scientific exhibits promptly.

As many members wish to make reservations in advance, the local committee has secured the following rates per diem:

Hotel Danville: Every room with bath tub or shower, or combination tub and shower, as preferred.

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Single rooms $2.00 to $4.00; double rooms $4.00 to $7.00.

Hotel Burton: Single rooms without bath $1.50 to $2.00 and with bath $2.00 to $3.00; double rooms without bath $2.50 to $3.00 and with bath $3.50 to $4.00.

Leeland Hotel: Single rooms without bath $1.50 to $2.50 and with bath $2.00 to $2.50; double rooms without bath $2.50 to $3.00 and with bath $3.00 to $3.50.

In making plans for your summer vacation, be sure to reserve time for attending this meeting in Danville.

American Medical Association.

Official call has been issued for the eighty-ninth annual session of the Association in San Francisco, Calif., June 13 to 17, under the presidency of Dr. J. H. J. Upham of Columbus, Ohio. The House of Delegates will, as usual, convene on the first day, and the Scientific Assembly will open with the General Meeting on Tuesday evening at 8:30 p. m. In addition to the natural attractions of a visit to California and the "Golden West", much of social interest will add to the pleasure of those attending.

"See America" en route to the Convention in San Francisco.

Officials of our Society were pleased to learn from the American Express Company, Official Transportation Agents for the Convention tours, that they have already received an excellent response from physicians and their families, which indicates that the San Francisco Convention will be a great success.

This is the first time that the physicians have been offered the facilities of de luxe special trains visiting the scenic attractions of the west, at a very nominal all-expense cost from your home city. The route to San Francisco and the Convention traverses a route that contains many wonders, such as the Indian Pueblo District with its remnants of an ancient civilization long vanished from this continent; the Grand Canyon with its grandeur of scenic attractions; Southern California, with its glowing, sun-filled cities and orange empires, Spanish Missions, Catalina Island and the Pacific rolling up to the edge of white sands.

Returning, there is a choice of two routes. One includes the charming cities of America's Northwest: Portland, Seattle, Victoria, Vancouver and the majestic Canadian Rockies and its resorts. Route Two winds through Yellowstone National Park and its world-famous geyser region, through Salt Lake City, and the scenic beauties of the Royal Gorge, Colorado Springs and the mile-high city, Denver.

These special train tours are restricted to physicians, their friends and families, and have been made possible through the united interest and support of twenty-five state medical societies which makes it possible to offer the tours on an economical, all-expense basis. This is an ideal opportunity to enjoy a wonderful vacation with your family and in the company of friends and colleagues in this and other state societies.

Members of the Medical Society of Virginia who intend to participate in the convention tour should apply at an early date to the American Express Travel Service, 1414 F. Street, Northwest, Washington, D. C., for tour reservation, so as to secure the type of Pullman accommodations desired.

To Represent State Society at Conference.

Dr. G. F. Simpson, president, has appointed Dr. P. St. L. Moncure of Norfolk to represent the Medical Society of Virginia at the Fourth Annual Virginia State-Wide Safety Conference to be held at Monticello Hotel in Norfolk, on June 3 and 4. Our representative requests us to announce that all members of our Society interested in the work of this Conference are invited to attend.

News of Local Health Officers.

Dr. Linwood Farley, assistant health officer in the Valley Health District, has been appointed Health Officer *pro tem* of the Hanover County Health Department.

Dr. William Y. Garrett has been appointed Health Officer of the Prince William County Health Department. Dr. E. M. Holmes who has temporarily directed the activities there will now give his entire time to Fairfax County.

Medical College of Virginia News.

The climax of the Centennial celebration of the College will be at Commencement, June 7, with a general homecoming of alumni of all four schools.

At ten-thirty o'clock on the morning of June 7, the Centennial program proper is scheduled. There will be greetings from the State of Virginia, City of Richmond, The Founding College, Hampden-Sidney, Virginia State Colleges and Universities, Virginia Non-State Colleges and Universities, the son

of the founder of the University College of Medicine, the student body, the alumni, and from science. The principal address will be delivered by Dr. Henry A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard Medical School.

At eight o'clock on the evening of June 7, the Commencement exercises will be held, with Dr. J. Rion McKissick, President of the University of South Carolina, as the principal speaker. About one hundred forty students will be graduated from the four schools of the institution.

Colleges and universities throughout the nation will be invited to send representatives for the Centennial program.

Dr. Lewis E. Jarrett, Director of the Hospital Division, has been elected to membership in the House of Delegates of the American Hospital Association.

News from University of Virginia, Department of Medicine.

At the meeting of the University of Virginia Medical Society on March 7, Dr. J. C. Flippin spoke on "Dr. Walter Reed" and Dr. G. M. Lawson discussed "Virus Infections of the Central Nervous System."

On March 22, Dr. Marion B. Sulzberger of New York City addressed the Univeristy of Virginia Medical Society on the subject Allergy to Simple Chemicals: Some Practical, Theoretical and Experimental Aspects.

At the meeting of the University of Virginia Medical Society on March 28, Dr. J. L. Bollman of the Mayo Clinic spoke on Physiology of the Impaired Liver.

Dr. Alfred Chanutin presented a paper on Water Balance in Nephritic Animals before the Federation of American Societies for Experimental Biology in Baltimore on April 2.

Drs. J. Edwin Wood and James R. Cash presented a paper on Hypertension and Obesity—Experimental and Clinical Observations before the meeting of the American College of Physicians in New York on April 4 to 8.

At the meeting of the American Association of Anatomists in Pittsburgh on April 14 to 16, Dr. H. E. Jordan presented a paper on Smooth Muscle Simulacra of Discs of Cross-Straited Muscle; Dr. C. C. Speidel on Direct Observations of Minute Structural Changes in Fibers of Cardiac Muscle During Irritation and Injury, and the Significance of the Intercalated Discs of the Heart; and Dr. J. E. Kindred on A Quantitative Histologic Study of the Lymphoid Organs of Twenty-Day and Thirty-Day Old Albino Rats.

At the meeting of the Southwestern Virginia Medical Society in Abingdon, Virginia on April 14, Dr. H. B. Mulholland spoke on Sulfanilamide, Pneumonia Serum and Protamine Insulin; Dr. R. V. Funsten spoke on the subject of Some Suggestions in Fracture Treatment.

Jefferson Medical College of Philadelphia News.

The William Potter Memorial Lecture was delivered by Dr. William Boyd, Professor of Pathology and Bacteriology, University of Toronto, on April 18. His subject was "Growth, Normal and Abnormal."

News Notes from Duke University School of Medicine.

The Durham-Orange County Medical Society held its regular monthly meeting at Duke Hospital April 8, at which papers were presented by Dr. W. B. McCutcheon and Dr. J. W. Beard.

On April 12, Dr. Hugh H. Trout, Surgeon-in-Chief of the Jefferson Hospital, Roanoke, Va., gave a clinic, showing motion pictures of an operation for radical mastectomy.

On April 13, Vilhjalmur Stefannson, Arctic explorer, gave a lecture on Diet in Primitive People.

On April 14, Dr. Harold W. Brown, Professor of Preventive Medicine and Public Health at the University of North Carolina, lectured on Hookworm.

Dr. Lomax Gwathmey,

Norfolk, was recently in an automobile accident in which he suffered a fractured patella and multiple bruises. While somewhat incapacitated because of the knee injury, his condition was not regarded as serious.

Dr. J. Shelton Horsley,

Richmond, on April 6th, read a paper on "The Symptoms, Diagnosis and Treatment of Cancer of the Stomach" before the Lancaster County Medical Society at Lancaster, Pa. On April 18th, he gave two papers for the Arkansas Medical Society at their

annual meeting at Texarkana. One of these papers was on cancer of the stomach read before a scientific session, and the other was a lecture on cancer before the public meeting of the Society.

The Virginia Society of Oto-Laryngology and Ophthalmology

Will hold its annual meeting at the Williamsburg Inn, Williamsburg, Saturday, May 21st. All Eye, Ear, Nose and Throat men of Virginia are invited to attend. Dr. M. H. Hood of Portsmouth is president and Dr. Charles T. St. Clair of Bluefield, W. Va., secretary.

Interesting Meeting.

The Virginia Academy of Science will hold its sessions this year, Friday and Saturday, May 6th and 7th, at the Virginia Polytechnic Institute in Blacksburg.

Dr. H. B. Haag of the Medical College of Virginia is Chairman of the Medical Section, and Dr. I. D. Wilson of the Virginia Polytechnic Institute is Secretary. The program of this section consists of twenty-two papers, some of them of immediate clinical interest, and some of them on scientific investigations that may later develop into matters of clinical importance. All those interested are cordially invited to attend.

Married.

Dr. Richard B. Nicholls of Norfolk and Dr. H. Aurelia Gill of Richmond, recently associate physician at the Woman's College of the University of North Carolina, in Richmond, April 1.

Dr. Richard Campbell Manson and Miss Mary Kathryn Taylor, both of Richmond, April 23.

Dr. James Murray Ellzey, Jr., Chestnut Hill, Pa., and Miss Florence E. Haines, Frankford, Pa., April 8. Dr. Ellzey is an alumnus of the Medical College of Virginia, having been a member of the class of '31.

Dr. William Bernard Carpenter of Lovettsville and Miss Eilene Ward of Richmond, April 16.

Dr. Joseph Edward Gladstone of Exmore and Miss Doretta Anne Roberts of Cape Charles, April 9.

The Virginia Society of Obstetricians and Gynecologists

Held its Spring Travel Clinic in Philadelphia, April 5 and 6, under the presidency of Dr. F. O. Plunkett of Lynchburg. Dr. S. E. Oglesby of Lynchburg was acting secretary for Dr. E. S. Groseclose. In addition to these, the following doctors attended and reported an excellent and instructive time: Drs. Joseph Bear, William M. Bickers, A. L. Carson, Jr., J. M. Habel, Jr., M. P. Rucker, L. L. Shamburger, H. C. Spalding and J. M. Whitfield from Richmond; C. J. Andrews from Norfolk; T. J. Williams from Charlottesville; George S. Hurt from Roanoke, L. M. Allen from Winchester; and Philip Brown from Asheville, N. C.

Wet and dry clinics were held at the University of Pennsylvania Hospital during the morning of the 5th by Drs. Charles C. Norris and Carl E. Bachman, and in the afternoon at Jefferson Hospital by Dr. Norris W. Vaux. On the 6th, the clinics were at the Woman's Clinic of the Pennsylvania Hospital (Philadelphia Lying-In Hospital), under the direction of Drs. Clifford B. Lull and Robt. A. Kimbrough, Jr.

Dr. Francis W. Upshur,

Richmond, has been appointed Venereal Disease Control officer for Richmond. This is a new work undertaken by the City, with a view to uncovering and eradicating gonorrhea and syphilis in this community.

Virginia Tuberculosis Association.

The annual meeting of this Association was held in Richmond, March 24th. Dr. Paul H. Ringer, Asheville, N. C., president of the Southern Tuberculosis Conference, and Dr. I. C. Riggin, Richmond, State Health Commissioner, were the principal speakers.

Mr. J. Vaughan Gary, Richmond, was elected president, and Dr. Roy K. Flannagan, secretary. Among those on the executive committee are Dr. Fletcher J. Wright, Petersburg; Drs. Roy K. Flannagan and Dean Cole, Richmond; and Dr. C. Lydon Harrell, Norfolk. New directors include Dr. F. J. Clements, Stony Creek, and Dr. E. C. Shull, Herndon; those re-elected are Drs. J. B. Nicholls; Catawba Sanatorium; Fletcher J. Wright; P. M. Chichester; Dean Cole, and Roy K. Flannagan.

Portrait of Dr. Flippin Presented University of Virginia.

A portrait in oils of Dr. James Carroll Flippin, Dean of the Medical School of the University of Virginia, was presented to that School in April. The portrait is the work of the distinguished American artist, Alpheus Cole. It was presented by James B. Black, Jr., student president of the Department of Medicine, and was accepted by Dr. John Lloyd

Newcomb, president of the University. Dr. Harvey E. Jordan, assistant dean of the Department of Medicine, presided at the exercises.

Early T. B. Diagnosis Campaign.

Dr. T. Dewey Davis, chairman of the Medical Committee of the Richmond Tuberculosis Association, appointed Dr. Emily Gardner as general chairman for the Early Diagnosis of Tuberculosis Campaign recently held in Richmond. After assuming control of this work, Dr. Gardner appointed Dr. A. S. Hurt, Jr., as clinic chairman.

Dr. William M. Moir,

Recently Service Fellow in Pharmacology at the University of Virginia, Department of Medicine, is now in Indianapolis, Ind.

"Eyes on the Future"

Is the title of the twenty-third annual report of the National Society for the Prevenion of Blindness. In 1937, the Society's efforts to prevent loss of sight from disease were given added impetus by the tremendous progress of the campaign to stamp out syphilis, one of the major causes of blindness. One hundred and twenty students attended the summer courses for training of sight-saving class teachers, and forty-four new sight-saving classes were established during the year, making a total of 558. Special activity is noted in regard to the annual campaign for a "safe and sane" Fourth of July and the work of the Committee on Statistics of the Blind in securing data on the causes of blindness. This was the fifth consecutive year in which members and donors contributed more than they did the preceding year.

American Board of Obstetrics and Gynecology.

The oral, clinical, and pathological examinations for Group A and Group B applicants will be held in San Francisco, California, on Monday and Tuesday, June 13 and 14.

An informal dinner for the Diplomates of this Board, their wives and others interested in the work, will be held at the Palace Hotel, San Francisco, on Wednesday evening, June 15, at seven o'clock. Dr. William D. Cutter, Secretary of the Council on Medical Education and Hospitals of the American Medical Association, will address the group, and the successful candidates of the preceding two days' examinations will be introduced in person. Tickets, at $2.25 each, may be obtained in advance from Dr. Joseph L. Baer, 104 S. Michigan Avenue, Chicago, Illinois, or at the door. Reservations should be made in advance if possible.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

Dr. and Mrs. A. D. Parsons

And daughter, Alyce France, of Richlands, have returned to their home after spending sometime in Umatilla and St. Petersburg, Fla.

Dr. Earle G. Brown,

Formerly Health Officer of Arlington County, has accepted the position of County Health Commissioner of Nassau County, N. Y. He is located in Mineola, N. Y.

Dr. G. Chambers Woodson,

Richmond, announces the removal of his office to the Grace-American Building, at the corner of Fourth and Grace Streets.

The Virginia Hospital Association

Held its annual meeting at Columbia, S. C., the middle of April, in conjunction with the associations of North and South Carolina. At this time it was decided to hold the 1939 Tri-State Conference at Old Point Comfort, Va. Officers of the Virginia Unit elected at this time are: President, Mr. O. K. Fike, of Grace Hospital, Richmond; vice-president, Dr. J. M. Shackelford, of Martinsville; and secretary-treasurer, Mr. M. Haskins Coleman, director of the Hospital Service Association, of Richmond.

Report of St. Elizabeth's Hospital.

The Annual Report of St. Elizabeth's Hospital, Richmond, for 1937 has just been published. This covers the work of the hospital in its twenty-sixth year and the seventeenth year of its administration as a general surgical and medical hospital. It includes all patients admitted to the hospital, but does not include those operated upon or treated elsewhere by members of the Staff. In the first few pages are listed the publications by members of the Staff, and statistics of the School of Nursing and Out-Patient Department. There follows a record of the diagnosis and operation on all patients admitted to the hospital. The report also contains a critical resumé of all deaths occurring in the hospital during 1937,—forty-six deaths with thirty-one necropsies.

There was about the same number of appendix

and hernia cases, with an increase in the number of gastro-intestinal and malignant cases. There has also been an increase in the number of medical and urological patients.

In 1937 there were 1,512 admissions, compared with 1,417 in 1936. There were 156 appendectomies in 1937 with no deaths during the year, making a series of 795 operations for appendicitis since January 1, 1931, with five deaths, a percentage of 0.6 per cent.

The number of operations on the stomach and for cancer of the breast has increased. There were twenty-two partial gastrectomies without a death in 1937, compared with thirteen in 1936; twenty-five operations for cancer of the breast without a death in 1937, compared with eighteen in 1936.

The greatest increase was in the Out-Patient Department, with 3,782 examinations in 1937, and only 1,893 in 1936.

Dr. Harry Golston,

Recently of Roanoke, entered the United States Public Health Service on March 1, as a Passed Assistant Surgeon, and is now stationed at Washington, D. C., on the U. S. Compensation Commission.

Gill Memorial Annual Spring Graduate Course.

The twelfth annual Spring Graduate Course of the Gill Memorial Eye, Ear and Throat Hospital in Roanoke, last month, was attended by sixty-five doctors from nineteen states and Canada. The following were the guest lecturers: Drs. Walter E. Dandy, Baltimore; John A. Kolmer, Philadelphia; Chevalier L. Jackson, Philadelphia; I. Friesner, New York; John J. Shea, Memphis; Claire L. Straith, Detroit; Edmund B. Spaeth, Philadelphia; Bernard M. Samuels, New York; Daniel B. Kirby, New York; LeGrand H. Hardy, New York; Grady Clay, Atlanta; and Mr. Bernard M. Samuels, New York.

Doctors Head A.P.V.A. Branch.

Dr. E. Pendleton Tompkins, Lexington, was re-elected president of the Rockbridge County Chapter of the Association for the Preservation of Virginia Antiquities, and Dr. Francis Lee Thurman, Buena Vista, was elected vice-president, at the annual meeting of this Branch held recently.

Dr. W. R. Bond,

Formerly Professor of Physiology at the Medical College of Virginia, and for the past three years Director of Rare Chemicals, Inc., New York, has returned to Richmond where he is affiliated with the Charles C. Haskell and Company, Inc.

The American Association of Industrial Physicians and Surgeons

Will hold its twenty-third annual meeting, in conjunction with the second annual Midwest Conference on Occupational Diseases, at the Palmer House in Chicago, June 6-9, under the presidency of Dr. Royd R. Sayers, Washington, D. C.

An open invitation has been extended all doctors to attend these sessions because of the importance of broadening the efforts of industrial medicine.

Accidents in 1937.

The National Safety Council has recently announced the roll of accidental deaths and injuries for 1937 as dead 106,000, permanently injured 375,000, and temporarily injured 9,400,000. The estimated cost of this was $3,700,000,000. Although the deaths from accidents of all causes decreased 4 per cent from 1936, traffic accidents increased 4 per cent. Full details on accidents in 1937 may be obtained from the *Journal of the American Medical Association* for March 12.

Dr. James William Tankard,

Recently connected with the Lee General Hospital at Pennington Gap, has located at Jenkins, Ky., where he is on the staff of the Jenkins Hospital.

Harvard Club of Virginia.

At the annual meeting of the Club early in April, Dr. Thomas F. Wheeldon, of Richmond, was elected president for the ensuing year and Dr. Lee E. Sutton, Richmond, and Dr. Hyman Cantor, Petersburg, were named vice-presidents.

Dr. W. C. Caudill,

Pearisburg, has been appointed a member of the Commission on Redistricting the General Assembly —one of eight legislative commissions announced by the Speaker of the Virginia House of Delegates.

Dr. Deryl Hart,

Professor of Surgery at Duke University Medical School, Durham, N. C., was the guest speaker before the Richmond Academy of Medicine at its meeting on April 12. His subject was "Sterilization of the Air in the Operating Room with Bacteriacidal Radiant Energy".

Dr. Dudley C. Smith,

Of the University of Virginia Hospital, was the

principal speaker at the meeting of the Mothers' Club of Charlottesville, early in April.

Alpha Epsilon Delta Convention.

The Fifth Biennial Convention of the Alpha Epsilon Delta Honorary Premedical Fraternity was held at Chapel Hill, N. C., March 24-26, the Beta Chapter, at the university of North Carolina, acting as host to eighty-five visiting members and delegates from twenty-one chapters in fourteen states.

One of the most important reports to the convention was the success reported by the various chapters for their social hygiene programs among the college students, many having well conducted programs on mental and social hygiene for the students. Two of the high points of the convention were the illustrated lecture by Dr. Addison G. Brenizer, of Charlotte, N. C., on "Surgical Anatomy of the Thyroid Gland and Thyroidectomy", and the address by Dean Wm. deB. MacNider, of the University of North Carolina Medical School. on "The Biologically-Minded Physician", at the convention banquet Saturday evening.

Dr. Charles F. Poe, professor of Chemistry, University of Colorado, was elected Grand President of the Grand Staff.

American Association for Thoracic Surgery.

At the meeting of this Association in Atlanta, Ga., early in April, San Francisco was selected as next year's meeting place, and Dr. Harold Brunn of that city was named president. Dr. I. A. Bigger of Richmond was elected treasurer, and Dr. Richard Meade, former Virginian now of Philadelphia, was chosen secretary.

Dr. John O. Hurt,

Who has been engaged in general practice at Bent Mountain, Va., for the past year, has returned to Staunton, where he has his former position on the medical staff of the Western State Hospital.

Dr. D. Hunter Marrow

Is again at his home in Boydton, Va., after his usual winter vacation at Daytona Beach, Fla.

Doctors Head Davidson Alumni in Richmond.

Dr. Porter P. Vinson was elected president and Dr. Richard C. Neale vice-president of the local chapter of the Davidson College Alumni Association at its annual meeting in Richmond, the midde of April.

National Health Council.

The election of Ira V. Hiscock, Professor of Public Health in the Yale University School of Medicine, as President of the National Health Council for 1938 was announced in March. Professor Hiscock succeeds Dr. Donald B. Armstrong, Vice-President of the Metropolitan Life Insurance Company, who becomes a member of the Council's Board of Directors.

Research workers from all parts of the United States used the facilities of the National Health Council Library during the past year. In 1937, the services of the library were made available more than 1,500 times to others than staff members of the seventeen organizations in the Council.

The library now contains more than 6,000 volumes and 30,000 pamphlets dealing with public health, sanitation, hygiene, and related subjects, and more than 500 medical and educational periodicals are received regularly from all parts of the world. As an aid to public libraries in the selection of books on health subjects, a list of approximately 300 health books of interest to the general public is being compiled at present.

The American Neisserian Medical Society

Will hold its fourth annual session in Washington, on May 16 and 17, under the presidency of Dr. C. C. Norris, of Philadelphia. The meeting will open with a symposium on sulfanilamide, with Dr. Perrin H. Long, of Johns Hopkins Hospital, as the principal speaker. The business meeting, with election of officers, will be held on the second day, following which a number of papers will be presented.

Further information may be obtained from the secretary, Dr. Oscar F. Cox, 113 Bay State Road, Boston, Mass.

The Eastern Surgical Society

Held its annual meeting in Richmond, April 22-23, under the presidency of Dr. I. A. Bigger, Richmond. Dr. John Bowler, Hanover, N. H., was elected president, and Dr. Maxwell Harbin, Cleveland, continues as secretary-treasurer. The 1939 meeting will be held in Hanover, N. H.

The American Association on Mental Deficiency,

Under the presidency of Dr. Harry C. Storrs, Thiells, N. Y., held its annual meeting in Rich-

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mond, April 20-23. Officers elected were: President, Dr. Neil A. Dayton, of the Massachusetts State Department of Mental Diseases, Boston; vice-president, Dr. Fred Kuhlmann, St. Paul, Minn.; and secretary-treasurer, Dr. E. Arthur Whitney (re-elected), Elwyn, Pa.

Home for Convalescences.

A home for the care and treatment of chronic aged and convalescences has been opened at Arrington, Nelson County, Virginia, under the care of Dr. and Mrs. Fred M. Horsley. Information upon request. (*Adv.*)

Medical Research.

Physician having access to a complete Medical Library offers his services to authors and others in locating references, or for medical research of any kind. Reasonable fee. Address "No. 38", care this Journal. (*Adv.*)

Obituary Record

Dr. Stark Armistead Sutton,

Prominent physician of Norfolk, died April 1st, having been ill but a short time with pneumonia. He was sixty-five years of age and a native of North Carolina, though he had been a resident of Norfolk for the past fifty-five years. Dr. Sutton received his medical degree from the University of Maryland in 1894. He was at one time Norfolk health officer, and was active in civic, social and business affairs, as well as being a Mason. Dr. Sutton was a member of the Medical Society of Virginia. His wife and two sons survive him.

The following resolutions were adopted by the Norfolk County Medical Society:

Dr. Stark Armistead Sutton was born in North Carolina, but, early in life, with his parents, he removed to Norfolk, where the remainder of his all too short and most useful life was passed.

After his graduation from the medical school of the University of Maryland, he began in Norfolk that professional career the record of which is written in the hearts of hundreds of those whose lives are happier because of his medical skill, and patient and sympathetic understanding of those numerous disturbing problems of life about which every doctor is consulted.

Dr. Sutton had an unually quiet and unassuming demeanor, and yet he possessed a keen and refreshing sense of humor that made him a delightful companion, and helped him to face with equanimity many of the very trying situations incident to a busy doctor's life.

In recent years, because of impaired health, his activities were moderately restricted, and yet his interest in modern medicine never waned. He did not allow himself to fall behind its progressive course.

At 11:40 o'clock on the night of April 1st, after a very short illness from pneumonia, an illness so sudden and brief that many of his intimate friends were unaware of it, he died, and the whole community in which he lived and labored was greatly shocked by the catastrophe.

Already he is greatly missed and the Norfolk County Medical Society, in which for so long he was very active, mourns his passing.

It is hereby resolved that this brief memorial shall be incorporated in the records of the Society, and a copy sent to Dr. Sutton's family and one to the VIRGINIA MEDICAL MONTHLY.

JULIAN L. RAWLS,
P. ST. L. MONCURE,
N. G. WILSON,
Chairman.

Dr. Joseph Bishop Wolfe,

Coeburn, Va., died April 6th. He was a native of Wolfe County, Ky., and sixty-nine years of age. He graduated from the Louisville Medical College in 1891, and began his practice in Coeburn where he founded the Coeburn Hospital in 1914. Dr. Wolfe had been a member of the Medical Society of Virginia for thirty-six years.

Dr. Paul Eustace Redd,

Well-known Richmond physician, died March 27th, after having been in ill health for several years. He was sixty-four years of age and a graduate of the Medical College of Virginia in 1895. Dr. Redd had practiced in Richmond for more than thirty-five years. He was for a number of years a member of the Medical Society of Virginia. His wife and a daughter survive him.

Dr. Louis Burgin McBrayer,

Prominent physician of Southern Pines, N. C., died April 1st, having been ill for several months. He was sixty-eight years of age. Dr. McBrayer held office in many organizations in North Carolina, among them being secretary-treasurer of the Medical Society of the State of North Carolina for twenty-one years, and also its president; president of the State Board of Medical Examiners; managing director of the State Tuberculosis Association; superintendent of the State Sanatorium for the Treatment of Tuberculosis; and president of the Southern Conference on Tuberculosis.